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ORIGINAL ARTICLES

THE MODERN TREATMENT OF PULMONARY TUBERCULOSIS; THE IMPORTANCE AND DIFFICULTY OF MAKING AN EARLY DIAGNOSIS.

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No factor in the treatment of pulmonary tuberculosis is more essential to success than an early diagnosis. This statement is so self-evident that proof is unnecessary, and it would seem almost superfluous to even make the statement were it not for the fact that but comparatively few patients are placed under treatment during the incipient stage. When we speak of the curability of tuberculosis as applied to a large majority of cases it should always be understood that this statement presupposes an early diagnosis. An analysis of the reports of the leading sanatoria in this country reveals the fact that instead of a majority of patients admitted to those institutions being in the incipient stage as is supposed, they are, in nearly every instance, in the minority.

In a state hospital where the law is mandatory that none but incipient cases shall be admitted, the medical director states that in a certain year 965 applications for admission were received. Of these 205 were accepted as incipients on the reports of examiners selected throughout the state with the greatest care, and who were presumably skilled diagnosticians. The superintendent of the institution found that only 101 could be properly designated as early cases. He further states that the average proportion of incipient cases in the hospital at that time was 60 per cent., and only about one-tenth of all the applications supposed to be incipients could properly be included in that class. By a rigid enforcement of the law it was found that not more than one-third of the beds were filled, and this, too, in a charity hospital devoted exclusively to tuberculous patients in a state with an estimate of 50,000 tuberculous patients and a mortality of 14,000 annually.

In another charity institution to which none but incipient cases are supposed to be admitted no classification is made in their report. Although every precaution has been taken to prevent the admission of any except incipient cases, a number of those advanced and far advanced have been practically forced upon the institution. When I asked the medical director why no classification had been made he replied that it might have been regarded as such a reflection upon the official examiners that he thought it wise to depart from the usual custom. He also said that although every precaution was taken to carefully select medical examiners, it was not possible, even in populous centers, to find men who were skilful diagnosticians, or if skilful would not allow their judgment to be overridden by their sympathies in the recommendation of cases for admission. In an institution of world-wide reputation no classification is reported for perhaps the same reason. Another institution where a classification is reported we find out of a total of 156 patients admitted, 24 were incipient, 74 advanced and 58 far advanced. In another, supported by private charity and where they attempt to enforce the rule to admit none but incipient cases, no classification is made in their report, but a careful analysis of their statistics indicates substantially the same conditions as in those where a report has been made. In another, supported by contributions from people all over the United States and where the rule is absolute that none but incipients shall be admitted, the medical director told me confidentially that they were contending with the same difficulty. In another sanatorium, supported by private charity and where it is likewise attempted to enforce this rule, out of a total of 157 patients 24 were incipient, 98 advanced and 35 far advanced. This is an institution not dependent for its support upon contributions of patients. The medical director gave as a reason for not enforcing the rule that if he did many of his beds would be vacant. In a report of one of the oldest and best appointed private institutions in the country, out of 261 cases 45 were incipient, 94 advanced and 122 far advanced. At the Ottawa Tent Colony the conditions are substantially the same, and, while we, too, have attempted to enforce the rule, we have experienced the same difficulties which obtain elsewhere.

I have not felt at liberty to give the names of these institutions from whose statistics I quote for the reason that some part of the information is confidential, and where it is not, the use of their statistics might be regarded as a reflection upon the institutions themselves, especially those regulated by law, or by rules established by boards of directors, which are supposed to be enforced. While some are securing a more favorable class than others, there are none, however strict, who are receiving a class of patients for whom the best results can be obtained. It is safe to say that, notwithstanding the fact that there are only a few sanatoria in the United States and a multitude of tuberculous patients, if the rule was rigidly enforced that none but incipient cases should be admitted almost every institution in the country would have many vacant beds. This condition of affairs is general, and it is only by thus bringing these facts together that we can demonstrate the serious handicap under

which sanatoria officials are doing their work—conditions which must be remedied if we are to prevent the modern treatment of tuberculosis from falling into disrepute.

This extraordinary condition of affairs leads to the inquiry as to why the disease is not recognized during the early stages, and why more patients are not given the opportunity of receiving treatment at the only time when we can truthfully and with a reasonable degree of certainty promise a cure. Is it because the definition of incipient tuberculosis is too severe? Or that refinements of diagnosis are required which only expert skill can supply? The primary reason is probably due to the fact that it is only very recently that it has been demonstrated that tuberculosis is curable. While this fact is generally accepted, the conditions and limitations of the treatment are not generally understood. The tendency of the human mind is always to extremes. At first it was difficult to arouse the people from their apathy which grew out of the hopelessness with which the disease was formerly regarded. In the past the consumptive was abandoned to his fate, or at least only treated in a perfunctory manner with but little hope of success. Because of this attitude of hopelessness but little attempt was made to diagnose the disease in its early stages. Now that the public is coming to understand that tuberculosis is curable they have not yet learned that this is true only within certain limitations and under rather well-defined conditions. Time enough has not yet elapsed to educate either the public or the profession as to how and to what extent tuberculosis is curable. The profession as a whole are not capable of making an early diagnosis. This statement is intended as no reflection whatever and would be exceedingly unjust if it were. Trudeau is justified in his statement that the "average medical man's idea of tuberculosis only relates to the disease after the rational and physical signs have become well marked." There are two very important reasons why this is true. First, the hopelessness of a cure in times past has made it unnecessary to make an early diagnosis, as the fate of the patient was regarded as the same whether an early or late diagnosis was made. Second, the vast majority of medical men have had little or no instruction, either in or out of college, for the reason that there was a deficiency of clinical material available for the purpose of teaching how to make an early diagnosis. We have had but little opportunity to study developing cases of pulmonary tuberculosis. Patients seen in practice, or text-book descriptions, simply portray the so-called classical features of advanced disease. Neither the profession nor the public is responsible for the conditions which have made it practically impossible for us to make an early diagnosis in the past. Our responsibility is for the future, and we will certainly be culpable if we no not recognize our duty and set about, and that very speedily, to remedy existing conditions.

It is upon the general practitioner that the brunt of the fight against tuberculosis must fall. Most patients come first to him for consultation. Every family physician should, so far as possible, be a specialist in tuberculosis, for it is by far the most frequent disease with which he has to

deal. Few others with intelligent and timely action will bear such good fruit and so much gratitude from the patient and his friends. In no other branch of his practice will the mournful results of erroneous diagnosis or self-complacent irresponsibility be visited so disastrously upon him. He must either be skilled himself in detecting incipient tuberculosis, or, if not, be sufficiently familiar with the subject that he may refer his patient to a specialist in this field in order that no valuable time may be lost. There is no subject in the whole realm of medicine so imperatively demanding proficiency and no field which is so deplorably neglected. The day is past for waiting for the development of the so-called "typical picture" before we hazard a diagnosis. Frequent operations for appendicitis have demonstrated how vague and few the symptoms may be at times and yet how serious the pathological conditions presented. The physician is scarcely more justified in waiting until his patient has become greatly emaciated, has evidences of on-coming softening of the lungs or other well-defined and unmistakable symptoms before diagnosing tuberculosis, than he would be in waiting until a huge tumor had formed at McBurney's point, or a general peritonitis has ensued, before diagnosing appendicitis. A patient rarely consults us because he thinks he has tuberculosis. As a matter of fact, nothing is further from his mind, if the case be an early one. He usually seeks our advice because of some symptom which is annoying rather than what he regards as serious. Tuberculosis is an insidious as well as an elusive foe, and it is well for us to be always on the alert where any symptom is present which may possibly be due to this disease.

To make a diagnosis of incipient tuberculosis by the usual methods is no easy matter. Only a few years ago it required a very skilful surgeon to diagnosticate an early appendicitis. The necessity for an early diagnosis was recognized as so imperative that it engaged the especial attention of the profession for a number of years, until now it is so easy that any general practitioner who can not make a reasonably accurate diagnosis is regarded as culpably ignorant or negligent. The average physician has become so adept in diagnosing this disease that he can now make a diagnosis that would have been almost, if not quite, impossible for leading experts only a few years ago. The same careful attention to making an early diagnosis in tuberculosis will, in a much shorter time and with less effort, lead to the same results.

We too often hesitate in making a diagnosis because of the shock which we know will ensue if we tell our patient he has tuberculosis. We should not hesitate, however, to perform even this unpleasant duty. We should act candidly. It is criminal to tell a patient, while waiting, that he has a little "pulmonary catarrh," "bronchial affection" or "weakness of the lungs," and thus temporarily soothe his feelings while the disease is gaining ground. The patient when he first learns that he has tuberculosis, or even a doubt is expressed, is in most cases shocked and demoralized. He does not feel sick, and as a result resents the diagnosis. He is quite apt to entertain the conventional opinions as to the symptoms of tuberculosis, and the suggestion that he has so serious a disease usually

arouses a storm of protest. This is apt to lead him to compromise with the situation at a time when he is in need of special instructions and vigilant and skilled supervision. He is also quite apt to take the advice of some well-meaning but misguided friend rather than that of his physician. Worse than all, and the one thing which complicates the situation more than anything else, is that he is likely to consult one physician after another until he finds some one careless or ignorant enough to inform him, much to his relief, that he has "only a little weakness of the lungs" or some other indefinite condition, which lulls him into a false security for the time being. The skilful and conscientious physician is thus placed at a disadvantage. This, however, will be only temporary. His reputation will not only not suffer, but will be greatly enhanced in his community and even with the patient when the truth is finally revealed. The careless or ignorant physician will likewise find himself in disrepute. It will neither conduce to his reputation or peace of mind to have the patient complain later "if I had not been misled my life might have been saved."

It is quite the fashion among medical men nowadays to talk very glibly about making an early diagnosis in tuberculosis as if it were so easy that the merest tyro should be expected to know how to do it. The fact is that it is quite an accomplishment for any medical man, under present conditions and disadvantages, to make an early diagnosis based upon physical signs alone, and it is not to his discredit that he can not do so. He has had neither the experience nor facilities. All that should be expected of him, at least for the present, is that he be familiar with those symptoms which may be regarded as suspicious and be sufficiently alert to detect them. He should not feel that his reputation is imperiled by reason of a mistaken diagnosis, and particularly if the error is in favor of the safety of the patient physicians need not fear that their reputations will suffer by such a procedure. This statement is based on an observation of a number of patients who have been received at the Ottawa Tent Colony where a positive diagnosis had been made by their family physicians which was subsequently proven to be incorrect. In every instance the patient has not only rejoiced that he did not have the disease, but praised the physician for his care and discrimniation in protecting him.

To discuss the details of physical diagnosis and the various conditions which may be confused with incipient tuberculosis is beyond the scope and intention of this article. My object is not so much to throw any new light on the early diagnosis of tuberculosis as a whole as to present the situation as it now stands with a view to correcting the many errors of opinion and more particularly of practice. My purpose is to point out what seems to be the more common mistakes with reasons why a diagnosis is so rarely made in truly incipient cases.

Some general considerations, however, may not be out of place, especially in view of the fact that so much confusion exists as to what is meant by an early diagnosis. Any classification of the several stages of the disease must of necessity be purely arbitrary. The definition agreed

upon by the National Association for the Prevention of Tuberculosis is the one which is now generally accepted: "Slight initial lesion in the form of infiltration limited to the apex of one or both lungs or a small part of one lobe. No tuberculous complications. Slight or no constitutional symptoms (particularly including gastric or intestinal disturbance or rapid loss of weight). Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest. Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent." This definition differs very remarkably from the general conception of incipient tuberculosis.

The symptoms the early case presents are most varied and difficult even to enumerate. The indications which call for an examination for possible tuberculosis are the family history, history of recent exposure, of hemoptysis, pleurisy, past or present involvement of lymphatic glands or other structures, hoarseness or loss of voice, cough extending over a period of several weeks with or without expectoration, shortness of breath, loss of flesh or strength without obvious reasons, night sweats or repeated chills or chilly sensations, anemia, dyspeptic symptoms, recent acute illness with protracted convalescence. Any of these symptoms, occurring after childbirth, are all suggestive and should be considered.

The history of previous disease is not infrequently a valuable guide to a diagnosis. When the patient gives a history of a comparatively recent attack of malaria, typhoid fever, or influenza from the effects of which he has not fully recovered, or of a pleurisy or pneumonia, recent or remote, he may be giving a history of what was really a beginning tuberculosis which has been overlooked. How frequently we can say with almost absolute certainty that a so-called malaria was an acute manifestation of tuberculosis. This error is one very frequently made. The same is true, but perhaps to a less degree, of a recent attack of fever which was regarded as typhoid, where in fact the fever prostration, digestive disturbances and the respiratory symptoms have been tubercular. Idiopathic pleurisy is frequently tuberculous. Those who have studied the history of a large number of tuberculous patients state that there is an intimate relationship between idiopathic pleurisy and tuberculosis of the lungs. Those who pretend to give statistical information on this subject variously estimate the percentage at from 40 to 80 of idiopathic pleurisies which eventually develop as tuberculosis. A knowledge of this fact should make us watch every case of pleurisy with care. It is not safe to tell a patient that he has only a little pleurisy and let him go without further attention. There is no occasion for alarming such patients, but it is well to tell them that the pleurisy may be a beginning tuberculosis. At the same time assure them that they will get well. Fortunately cases of tuberculosis that begin with pleurisy are very promising; therefore, we can safely assure them that with proper attention they will get well, but they must take especial care of their health lest a more serious condition ensue. By such advice we are not only making an early diagnosis of tuberculosis in any case, but also

averting the causes which lead to the disease in a considerable percentage of cases.

Pneumonia with its almost identical clinical picture is not infrequently of tuberculous origin, or, if not, lights up a latent tuberculosis which if discovered early would result favorably. Influenza, or so-called "grippe," is a convenient refuge for any careless diagnostician for any respiratory infection not easily classified. Other diseases might be mentioned which are not infrequently confused with tuberculosis, but my purpose is simply to indicate how easy it is to be misled in attributing symptoms to other diseases rather than to enumerate all the mistakes usually made.

Another factor which has contributed in no small degree to a late diagnosis is the undue prominence given to laboratory methods and the tendency to ignore or underrate clinical methods. The unwarranted dependence on the presence of tubercle bacilli and the greatly exaggerated idea of its importance as the only reliable symptom has done immeasurable harm. In these days of laboratory diagnosis there is a tendency on the part of the physician to shift the responsibility of diagnosis from his shoulders to that of the bacteriologist and pathologist. Too much dependence is placed upon and too much valuable time lost in searching for the tubercle bacilli. Too much importance is also attached to negative results. Many physicians exclude tuberculosis because one or, at most, two or three, negative examinations of the sputum fail to reveal the tubercle bacilli. Patients are seen and examined, told to return again with their sputum without having the reasons explained or the difficulties of the diagnosis made clear. This is not infrequently continued until the patient wearies of what is to him a useless task. He either concludes that he has not tuberculosis or goes to another physician. The unwillingness to make a positive diagnosis and treat the suspected case as a consumptive until the tubercle bacilli appear costs the life of many a patient.

It should be borne in mind that tubercle bacilli can not be found in fully 5 per cent. of cases of tuberculosis. The search for the microorganism should be made repeatedly and at frequent intervals, but negative results should not outweigh a positive or even suspicious clinical picture. There are three symptoms in the initial stage of pulmonary tuberculosis which, when they occur together, are sufficiently reliable upon which to base a diagnosis. These are, first, a dry and hacking cough, lasting for a month or more; second, a progressive loss of flesh, strength and appetite; third, a subnormal temperature in the morning. These symptoms taken together are sufficiently conclusive to warrant a positive diagnosis and in point of time they anticipate the microscope.

Fortunately when in doubt or other methods of diagnosis fail, in these latter days we have a most delicate and reliable diagnostic aid in tuberculin. The technic, while not difficult, is exacting and it should not be used until familiar with the usual methods of its administration. Unfortunately, we frequently meet with an unreasonable prejudice against its use, because of the unskilful and indiscriminate manner in which it

was administered when first introduced. It is absolutely safe if administered according to recent methods. These vary, but the most common and best established is hypodermatically. The latest and simplest suggested is by the eye—the so-called ophthalmo-tuberculin test. This is so simple that any one may administer it and no preparation of the patient is necessary. It is as yet in the experimental stage, but gives promise of being successful.

Thus far the discussion of this subject has been based on the assumption that the patient has presented himself to the physician soon enough to enable him to make an early diagnosis. Unfortunately this is not always, or even as a rule, true; hence we are confronted with another duty and responsibility. The public must be educated. It is too much to expect that we can educate the laity how to make an early diagnosis. We can, however, educate them as to the necessity and teach them a few simple rules which will guide them to the extent that they will go to the physician early enough for him to make a diagnosis. This will not prove to be as difficult a task as it may seem. The public was very quick to respond to the doctrine of the contagiousness of tuberculosis, even to the extent of a morbid fear of the disease. By a little effort we can make the public equally sensitive to the importance of an early diagnosis.

Because so much stress is laid upon an early diagnosis it must not be inferred that no effort should be made to cure advanced and far advanced cases. The results even in these cases have been very satisfactory, but why should we be satisfied with 30, 40 or 50 per cent. of recoveries when we can with less effort in time and expense approximate 100 per cent.? Shall we stop short of the best possible results simply because under present conditions we are accomplishing far more than has been done in the past? It is now generally recognized by progressive physicians throughout the civilized world that early cases (variously estimated at from 75 to 95 per cent.) can be cured. In far advanced cases rarely ever. Moderately advanced and advanced a large percentage under favorable conditions. Because there is but little hope for unpromising cases shall we abandon them to their fate? By no means. This would be as heartless as it is cruel. Our attitude should be the same as toward others who are desperately sick. Give them the benefit of such care as is possible.

There are three interests involved in this problem. The cause, the institution and the patient. In an incipient case these three interests harmonize. Those belonging to the more unpromising classes conflict with the interests of the cause and the institution. While this is unfortunate and has a decided tendency to discredit them both, the interests of the patient must take precedence. While favorable statistics are desirable, humanitarian considerations should always prevail. It is assumed, however, that in the admission of unpromising cases care and discrimination will be exercised and not add unnecesary hardship to affliction. We must not expect to work under ideal conditions at present. Conditions will never be worse than now, and can only be made better by accepting them as they are and improving them as rapidly as possible. The public will promptly respond to the demands of the situation if we

are frank in calling attention to existing evils and suggest practical remedies for their solution.

The success of the sanatorium treatment has been so remarkable in many cases, in fact almost miraculous, when measured by former therapeutic measures, that many physicians who are not familiar with its limitations and who have heard exaggerated stories about recoveries in exceptional cases have become over-enthusiastic and send us patients who are absolutely hopeless, expecting them to make a recovery. We are certainly in need of all the enthusiasm we can stimulate. This excess, however, instead of helping the cause, is likely to result in a reaction and great injury done to the legitimate claims for sanatorium treatment. Such an effect would be little short of a calamity and can easily be avoided by getting our proper bearings.

In meeting the demands of the situation the profession must recognize the fact that we are on the threshhold of a new era in our management and treatment of the most destructive disease known to mankind. We are approaching a revolution in medicine which, if not as far reaching, is at least quite as important and, in fact, a component part of that revolutionary movement which began with the recognition of microorganisms as a cause of disease. That movement compelled a readjustment of our medical opinions and teachings and the unprogressive physician who at that time failed to recognize the trend of affairs or refused to accept the new doctrine lost his prestige with his colleagues and his clientele as well. The readjustment of opinions and methods to conform to the requirements of the present knowledge of tuberculosis are neither so radical nor so difficult as in the acceptance of the germ theory of disease; therefore, I am not prepared to accept the statement of a prominent health official who makes the assertion that the general practitioner can not be expected to diagnose tuberculosis in its early stages.

THE DIAGNOSIS OF CARDIAC INEFFICIENCY.*

GEORGE W. WEBSTER, M.D.

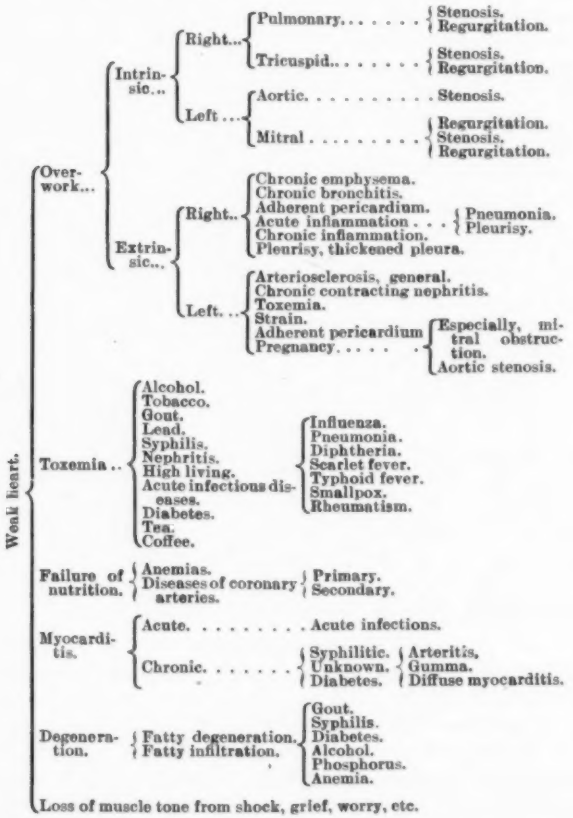
CHICAGO.

The work of the heart is expended in producing that difference in pressure between the arterial system on the one hand and the venous system on the other, which is the cause of the circulation of the blood; to keep the arteries overfull, to keep their elastic walls distended, thus making of the arterial system an elastic bag into which the blood flows intermittently and under high pressure, and out of which it flows under a lower pressure and in a steady flow at a slower rate in the capillaries. Any adequate conception of the symptomatology of weak heart is based on a knowledge of the law which says, "all the conditions which tend to diminish the difference in pressure between the arterial system on the one hand and the venous system on the other must increase venous pressure." In other words, a high arterial pressure means a low venous

* Read before the joint meeting of the Chicago Medical Examiners' Association, and the Chicago Medical Society, Nov. 20, 1907.

pressure, and a low arterial pressure—other things being equal— means a high venous pressure.

The time at my disposal will not permit me to take up at length the value of the age, sex, occupation, habits and previous illness, etc.



One glance at the above diagram shows that weak heart may arise from overwork, toxemia, failure of nutrition, myocarditis, fatty degeneration and loss of muscular tone; that the cause of overwork may be intrinsic or extrinsic, that the former may affect the right or the left heart and may be due to obstruction or to regurgitation; that the extrinsic causes may affect either side of the heart and may be due in the former to chronic emphysema, chronic bronchitis, adherent pericardium, acute inflammations as pneumonia and pleurisy, chronic inflammations such as thickened pleura, deformity of the chest; that the extrinsic causes of overwork of the left side of the heart may be general arteriosclerosis, contracting nephritis, toxemia, strain, nervous shock, adherent

pericardium, pregnancy. The toxic causes are many and include alcohol, lead, tea, coffee, syphilis, nephritis, high living, diabetes and the toxins of such infectious diseases as rheumatism, influenza, pneumonia, diphtheria, scarlet fever, typhoid fever, smallpox. Failure of nutrition may arise from anemia, and disease of the coronary arteries of the heart may enlarge beyond the nutritional possibilities of these vessels.

Myocarditis may result from the toxins of the acute infectious diseases and such diseases as syphilis, diabetes, etc. Fatty degeneration may be caused by gout, lead, syphilis, alcohol, phosphorus poisoning, anemia. Loss of muscular tone may result from shock, grief, worry, etc. The nervous system, while it neither initiates nor maintains the rhythmic movements of the heart, does control and influence and regulate them, and through it the heart's movements may be modified or even arrested. While any one of these factors alone may ultimately result in the overthrow of the heart, it is unusual to find only one at work. For example, in nephritis there is the overwork through sclerosed, contracted vessels, the toxemia or nerves and of heart muscle, together with impaired nutrition due to the depraved blood state. In pneumonia there is the increased work of the right heart, the toxemia of the heart muscle, the resulting degeneration. In arteriosclerosis there is overwork, toxemia, diminished blood supply of a depraved character through sclerosed coronaries to the heart muscle, which may have already hypertrophied to such an extent as to have outgrown the nutritional possibilities of even normal coronary arteries. But it is unnecessary to multiply examples.

It must be apparent to the most superficial observer that in any estimate of the actual efficiency of the heart in any given case it is important to take a broad comprehensive view of the subject, and that an etiological diagnosis is absolutely necessary.

SYMPTOMS.

The symptoms may be summarized as all those manifestations which grow out of venous engorgement.

Sleeplessness is often the first symptom to attract the attention of the patient. Sometimes the sleeplessness is due to the patient's inability to lie down and is relieved by a high pillow. At other times it is due to palpitation, nervousness, dyspnea, hacking cough. It becomes more significant if it occurs after a sleep of several hours.

Dyspnea of effort is perhaps the earliest sign of cardiac weakness, owing to the fact that venous engorgement occurs earliest in the pulmonary circulation. This air hunger may be slight and only after considerable exertion, or may be extreme with almost incessant cough, edema of the lungs, extreme anxiety, inability to lie down.

The cough may be only slight and occur on exertion or on lying down, or it may be severe, almost constant, and with bloody expectoration.

Precordial anxiety, a feeling that the heart is too large for the chest, or there may be a feeling of weight or oppression, seldom of actual pain.

Indigestion and diarrhea may occur from venous engorgement of the

digestive organs, and there may be weight and heaviness in the right side due to engorgement of the liver.

The urine may be scanty, high colored, irritating and may contain albumin and casts.

Cheyne-Stokes respiration is usually associated in our minds with cerebral disease and with pathologic changes in the medulla, but I believe it one of the early symptoms of myocardial disease, and Osler says that it is associated with chronic myocarditis oftener than with any other form of disease of the heart.

The Stokes-Adams syndrome, with its slow and infrequent pulse, transient vertigos or deep coma, its pseudoapoplectic attacks, slow sterterous breathing or Cheyne-Stokes respiration, is strongly suggestive of myocarditis.

True angina pectoris, while a symptom of coronary artery disease, is also a symptom of myocarditis and it is commoner in myocarditis than in any other form of cardiac disease.

The value and significance of any symptoms or signs when taken alone may be very slight indeed. It is only when viewed in the light of its associations that it becomes important and significant. A slight increase in the frequency of the heart, out of proportion to the temperature in a child, means much more when it occurs in the course of one of the acute infections than it does in an acute indigestion, and it means more in diphtheria and scarlet fever than it does in rheumatism. Precordial anxiety means more in the case of a man of 55 than it does in a young man of 20 years. Breathlessness on exertion is significant, but the same symptom occurring without exertion and during the night, and in a man of advanced years, and with sclerosed arteries, becomes of very grave import. Arrhythmia in a young person who takes little exercise and is anemic and works and sleeps in a poorly ventilated room is significant; it means that the auricles where the impulses originate are poorly supplied with depraved blood, but this symptom is far more serious in one with a dilated heart and hardened vessels.

Since it is well known that the toxins of diphtheria poison the heart muscles, that this results in parenchymatous degeneration which may be present for weeks, and since Krehl says "it has been definitely settled that the myocardium is anatomically injured by influenza," and since typhoid fever, lobar pneumonia, scarlet fever and erysipelas may result in myocardial disease, and since children are especially prone to these acute myocardial changes, arrhythmia, an increase in cardiac frequency out of proportion to temperature or after the fever has subsided, or a slow, infrequent pulse, should at once attract our attention, and its possible seriousness should be borne in mind. These symptoms, although slight in themselves, should, when taken in connection with a history of infection, be watched and treated with extreme care if we would avoid chronic myocarditis or the evil results of ill-timed activity.

Acute dilatation in acute alcoholism is less important than the same symptoms in the course of or following an acute infectious disease.

SIGNS.

After all, it is by means of the physical signs, "the handwriting on the wall," the symbolic history written out in legible characters for him who can interpret them, that the patient is individualized and the character of the work of his heart determined. This examination should be careful, painstaking and thorough. More mistakes are made from want of examination than from want of knowledge on the part of the examiner. Be methodical. Method is more important than fact. Method makes us independent of facts; it enables us to utilize all known facts, and it puts us in the way of discovering new facts. Method makes the difference between the man who discovers mere facts and the man who discovers laws.

Balfour tells us that thirteen years may intervene between the beginning of dilatation with symptoms and unequivocal signs of the same. Surely all this time there is evidence if we search for it and are able to recognize and interpret it. I fear too often there are those of us who, as the French proverb has it, "go through the forest and see no firewood." We should begin with a careful examination of the entire body by inspection and palpation combined, searching first of all for evidence of the existence or previous occurrence of any of those diseases which bear an etiological relationship to disease of the heart, or any intrinsic or extrinsic causes of overwork, or any causes of shock, strain, degeneration or toxemia.

The skin should be examined for any change in pigmentation, vascularization or edema, and the location of the latter should be noted. Pale straw-colored jaundice is common when the liver is engorged from weakened right heart. Cyanosis indicates impaired oxygenation of the blood and therefore pulmonary engorgement, which means weak heart. Swelling of the legs and feet indicate a high venous and consequently low arterial pressure and inefficiency of left ventricle. Edema of the lower eyelids often means nephritis, which increases the work of the left ventricle, and the resulting toxemia combined with overwork leads to an ultimate failure of the left heart.

Venous turgescence means high venous pressure, which always means low arterial pressure due to cardiac weakness. A systolic pulse in the enlarged external jugular is evidence of relative insufficiency of the tricuspid. A capillary pulse means interference with one or more of the three factors, vascular elasticity, peripheral resistance and sufficient frequency of ventricular contraction, which convert the intermittent outflow from the heart into the steady flow in the capillaries and is commonly present in aortic regurgitation.

The eyes should be examined with care. An arcus senilis is common in myocardial degeneration, and slight jaundice is often apparent only in the conjunctiva. The eye grounds show the earliest evidence of arteriosclerosis.

The hands should be examined for cyanosis, pigmentation or clubbing of finger ends, the latter indicating deficient aëration of blood for a considerable period of time. Anemia is early seen in the hands and

nails. Longitudinal ridges on the nails indicate a gouty condition, and transverse furrows may reveal even the time of a recent severe illness.

The pulse should be examined and the frequency, rhythm and character noted. A slight increase in frequency, out of proportion to temperature, may be the only symptom of acute myocardial degeneration in the acute infectious diseases. A slow, infrequent pulse is of more serious import under the same conditions. Arrhythmia is common in disease of the auricular branches of the coronary artery, in toxemia of the auricular muscle or anything which interferes with the origin or impulses in the auricles or their transmission to the ventricles. The blood pressure may be measured with a Stanton or other instrument, as it furnishes valuable and trustworthy information concerning the work of the left ventricle. The arteries should be inspected and palpated for evidence of arteriosclerosis, and the carotids inspected, as throbbing is characteristic of aortic regurgitation and, with a heaving thrusting heart beat and an apex beat displaced outward and downward, is diagnostic of this affection.

We come now to an examination of the heart region. Cardiac inefficiency is indicated by throbbing in the epigastric region, a weak, diffuse, feeble cardiac impulse, the apex beat not easily localized, but out to the left, and in some cases downward. The cardiac area is irregularly quadrilateral in outline, the dulness may extend to or beyond the right sternal border and to or beyond the nipple on the left. These signs, when associated with breathlessness and cyanosis, mean dilatation in the clinical sense, which means that there is a want of balance between the heart and its ability to work, that it is failing in its task of keeping the arteries overfull.

Auscultation, instead of being the first, should be the last step in a systematic examination of the heart. Auscultation should never be practiced until all possible information has been obtained by all other means. Then it should be done in accordance with correct methods. We begin by an examination of the individual heart sounds, determining whether these are normal in situation and intensity, and whether there is the normal disparity between the aortic and the pulmonic second tone, the disparity being in favor of the latter, at least up to adult life. An unusual accentuation of either of the second sounds should be interpreted as indicating undue pressure in the arterial system to which it belongs, or dilatation of the aorta, together with the fact that the ventricle belonging to the said system is satisfactorily performing the additional work which has been imposed upon it. For example, accentuation of the pulmonic second sound in case if mitral valve disease not only indicates the probable seat of the lesion, but that it is reasonably compensated as well. Weakening of all of the heart sounds or of individual heart sounds should be carefully noted. In syphilitic myocarditis, for instance, the heart sounds may be quite inaudible, particularly at the apex.

After having carefully studied the individual heart sounds, their position and relative intensity, the next step is to see whether they are ac-

companied or replaced by murmurs. We thus see that the most important questions concerning the character of the work done by the heart may be answered without the use of the stethoscope. Many examiners begin the interrogation of the heart by the use of the stethoscope, and their examination ends with its use. If murmurs are present they are recognized, and if not the heart is often pronounced healthy when the patient may be in danger of sudden death from a myocarditis.

My plea is for, first, more thorough, careful, systematic, painstaking examination; second, the recognition of those diseases or conditions which bear an etiological relationship to diseases of the heart; third, make the use of the stethoscope the final instead of the first step in the diagnosis; and fourth, the important thing is not one symptom or sign, but its significance when taken in connection with all others, its associations, the whole clinical picture, a complete clinical diagnosis which must include an etiological diagnosis.

THE WORK OF THE EDWARD SANATORIUM FOR THE TREATMENT OF PULMONARY TUBERCULOSIS, NAPERVILLE, ILLINOIS, DURING THE YEAR 1907.

(A DEPARTMENT OF THE CHICAGO TUBERCULOSIS INSTITUTE.)

THEODORE B. SACHS, M.D., Medical Director.

With a tuberculous population estimated at 20,000, the city of Chicago until one year ago had no provision for the treatment of cases of tuberculosis in the curable stages. The eyes of every consumptive were turned to the far western states as the only parts of the country in which tuberculosis could be cured. Thousands of men and women, with or without means, with no clear understanding of their condition and the proper method of treatment, were drifting annually to Colorado, Texas, Arizona, California, etc., "the land of hope," the climate which their imagination, and at times the misguiding medical advice had endowed with wonderful healing power, before which the manifestations of every case of tuberculosis disappeared like magic.

Disappointment and despair were the lot of a large proportion of these patients. When far away from home, in a strange city, they were bound sooner or later to come to the realization that among the elements of treatment of their disease climate holds a secondary place; that after all, in their home climate, with all its seeming disadvantages, a proper mode of treatment could have been easier instituted with but a fraction of the expense entailed in a trip to a far-away state. Homeless and friendless, a large number of them perished annually for the mere lack of nutritious food and other necessities of life; others, discouraged, wandered home in a more advanced stage of the disease, longing to pass the brief remainder of their life near their relatives and friends. Thus a tremendous waste of energy and money was taking place, with very little benefit to the patient and great financial drain upon the frequently meager resources of the consumptive's family.

That tuberculosis in the early stages can be cured under any climatic conditions was demonstrated long ago by the records of sanatoria in all parts of America and Europe. The results of such institutions as Adirondack Cottage Sanatorium at Saranac Lake, Loomis Sanatorium at Liberty, Bedford Sanatorium, Muskoka Cottage Sanatorium in Canada, Sharon Sanatorium, Massachusetts State Sanatorium, Ottawa Tent Colony, etc., all situated in widely different climates, are due essen-

General view of the Edward Sanatorium, Naperville, Ill. (Branch of the Chicago Tuberculosis Institute.)

tially to the thorough manner in which the principles of open-air treatment are carried out. The experience of the Edward Sanatorium is but a new addition to the accumulated evidence in favor of this doctrine.

The establishment of this sanatorium for the treatment of incipient cases of tuberculosis at Naperville, Ill., (this institution being at present a department of the Chicago Tuberculosis Institute) was made possible by the benevolence of one of Chicago's public-spirited women, Mrs. Eudora Hull Spalding. In the selection of the site, plan of the admin-

Administration Building, Edward Sanatorium, Naperville, Ill.

istration building, character of the outdoor sleeping quarters, etc., Mrs. Spalding displayed excellent judgment and familiarity with sanatorium requirements, which she had an opportunity to study in the eastern states. She created a magnificent plant, which can be very easily extended to provide accommodation for 100 patients, this being the ultimate object to be realized in not a distant future by the Chicago Tuberculosis Institute.

The sanatorium is located a quarter of a mile south of Naperville, Du Page County, Ill. Communication from Chicago is by the Chicago, Burlington & Quincy Railway, suburban trains leaving the Union Depot every two or three hours and reaching Naperville in fifty or sixty min-

"Taking the cure" at the Edward Sanatorium.

utes. The site is a farm of thirty-nine and one-half acres. The ground is elevated, affording an unobstructed view of picturesque scenery for miles around. Across the roadway is the Du Page river, with numerous groves of trees east of it; south, west and east of the institution—the boundless stretch of sloping ground and fertile land.

Interior of sleeping shack at the Edward Sanatorium.

The front part of the ground is occupied by an orchard and a large lawn. The administration building, placed some 400 feet back from the thoroughfare, is a two-story building with basement, of an attractive simplified Colonial design and built of wood. The main portion is about 61x32 feet and an L 57 feet long at the rear. The south and

east sides of the building are surrounded by open-air verandas. The basement contains the heating plant, gas generating apparatus, plant for hot water, fumigating room, bath and toilet facilities and storerooms. The first story includes a commodious assembly room, dining room, office, and in the annex, placed perpendicularly to the main building, a large kitchen of modern construction and furnishings, laundry, etc. On the second floor are rooms for the nurses and other employés. The building is so arranged that future additions can be easily made as they are found necessary. Water is supplied from an artesian well, a gasoline motor being used for conducting the water to all buildings and keeping the water tank full.

The sleeping quarters of the patients are open-air shacks, durably built, modeled (with some modifications) after Dr. King's lean-tos of the Loomis Sanatorium. Two shacks for women provide accommodation for sixteen, one men's shack for ten, nurses' shack for three. The shacks are provided with dressing rooms, toilet and lavatory facilities, electric light, etc.

The plant includes also a farm house with all the accessory buildings, an icehouse, a crematory for the burning of garbage, etc. The total capacity of the Edward Sanatorium at present is twenty-six. Plans are being formulated by the Chicago Tuberculosis Institute to extend the facilities of this institution to provide for 100 patients. It is proposed to erect a special structure to meet the following requirements of this institution: 1. "Observation" rooms with provision for outdoor treatment; in these rooms the new cases are to be studied during a trial period, at the expiration of which (if the course of the disease offers a favorable prognosis) the patient can be transferred to the open-air shacks. This provision is expected to facilitate the selection of proper cases and the institution of individual treatment in each case. 2. Provision for patients developing during their stay intercurrent affections (pleurisy, etc.). 3. Isolation rooms. 4. Examining rooms. 5. Laboratory. Ultimately the present administration building is to be transformed into a "service" building (dining rooms, kitchen, laundry, etc.). New shacks are to be erected from time to time as the number of patients grows.

The open-air method of treatment is followed in all its details at the sanatorium: absolute rest or regulated exercise, according to the individual condition; a liberal diet individualized as much as possible, according to the requirements of the case; strict medical supervision of all details. The earnest co-operation of the patient is obtained without difficulty, creating a cordial understanding between them and the management, and resulting in an atmosphere of contentment so essential to the successful management of tuberculous cases.

Koch's Bacillen emulsion is used in selected cases. The convalescent patients are supplied with work suited to their physical condition and individualized according to their general make-up and the kind of work they expect to do on leaving the sanatorium. This plan is carried out to the extent permissible under the present conditions of the institution.

It is proposed not to discharge patients as "apparently cured" or "arrested" until they demonstrate their ability to do several hours' work a day at the sanatorium without affecting their condition. A supervision of the discharged patients is continued by means of special "inquiry slips" filled out by them at the end of each month.

Out of twenty-six beds ten are free at the disposal of the Visiting Nurses' Association of Chicago, sixteen patients pay $10 a week each. It is proposed to form women's auxiliaries throughout the city for the purpose of supporting patients at the sanatorium, either fully or at half-rate. The first auxiliary is made possible by a contribution by Mrs. Louise De Koven Bowen of Hull House.

So far 61 cases have been treated at the institution:

Incipient	36
Moderately advanced	21
Not classified (left at the end of a few days)	4

CLASSIFICATION OF DISCHARGED CASES.

Condition on Admission.		Condition on Discharge.	
Incipient	20	Apparently cured	10
		Arrested	10
Moderately advanced	10	Arrested	5
		Improved	4
		Unimproved	1

CLASSIFICATION OF PATIENTS AT PRESENT IN SANATORIUM.

Incipient	15
Moderately advanced	11

The sanatorium is under control of the Chicago Tuberculosis Institue (51 La Salle St., Chicago), of which Dr. Henry B. Favill is president; Drs. Frank Billings and Robert H. Babcock, vice-presidents; David R. Forgan, treasurer; Ernest P. Bicknell, secretary, and Dr. E. A. Gray, chairman executive committee. The board of directors of the institute consists of Drs. W. A. Evans, N. S. Davis, A. C. Klebs, Theodore B. Sachs, L. Hektoen, Charles L. Mix, John A. Robison, Edwin W. Ryerson, Messrs. Sherman C. Kingsley, Stanley McCormick, Miss Harriet Fulmer, Mrs. Robert McGann, Mrs. Jesse L. Moss and Mrs. James L. Houghteling. Mr. Alexander M. Wilson is superintendent of the institute. Miss Laura A. Fetzer, a trained nurse, is superintendent of the sanatorium; her assistants are Miss Winnifred McEdward and Miss Laura Harris.

With six tuberculosis clinics (established at Rush Medical College, United Hebrew Charities Dispensary, Northwestern University Medical School, College of Physicians and Surgeons, Chicago Policlinic and Hahnemann Medical College), the Edward Sanatorium at Naperville, an educational department arranging popular lectures before all kinds of organizations, with a board of directors enthusiastically working shoulder to shoulder, the Chicago Tuberculosis Institute has at last succeeded in laying a permanent foundation for an effective campaign against the white plague in Chicago.

SPECIFIC INFECTION OF THE FEMALE.*

J. P. Roark, M.D.
BUSHNELL, ILL.

Fellow-members of the Military Tract Medical Association, I wish to extend to you a hearty welcome to this, my home town, and to assure you that I appreciate the honor you have conferred on me in calling me to preside over your deliberations. This association was the first medical society that I joined after taking my degree in medicine and it is still first in my affections. And while a man belongs to his county society as a duty that he owes to himself and to the whole profession, and this makes him a member of the state society and eligible to membership in the American Medical Association, it is always his personal affection for old friends that makes and keeps him a member of the Military Tract Medical Association. I believe it has been customary for the presiding officer to review in a general way the progress of medicine, but for my paper I have chosen a subject that has interested me for some time for the reason that I conceived that it had not received its proper attention either from the general practitioner or the specialist.

Specific infection of the female as it concerns the general practitioner is a condition that interests primarily the general practitioner, for the reason that he is called nearly always as first aid, and when the specialist finally sees the case it is because the complications have grown so grave that the ablation of some organ is in view as the only remaining means of either saving the life of the patient or of alleviating the condition of affairs. The wide prevalence of the coccus of Neisser and the almost general infection of the human race with this pathologic germ makes the number of these cases great enough to challenge the genius of any man to an attempt in its control. After consulting statistics of American observers I am inclined to make the statement that at least 50 per cent. of the young male adults in the United States have now, or have at some time in their lives, been infected with gonorrhea. This looks like a high estimate, but any man who has served at a free clinic in one of our large cities would, I believe, be more inclined to put it at 90 per cent.

Now, 95 per cent. of these young adults are, in a few weeks from the date of their infection, subjectively cured; that is, so far as they themselves know, they are entirely well. Actually what has happened in a large number of them is they have acquired an immunity to the particular strain of gonococcus with which they have been infected and no longer suffer from the symptoms of inflammatory reaction that was present before immunization. These cases are especially dangerous, because they are apt to become foci of infection in both licit and illicit intercourse. Given a young man of this class, we will assume he contracts matrimony with a girl who thinks she is not yet ready to assume the trials and responsibilities of maternity; the vaginal douche is used, and nothing in this world is more certain than that we will have a case of "pus-tubes." The general practitioner may prevent at least a part of

* Presidential address at the meeting of the Military Tract Medical Society, 1907.

these cases by plain talk to both parties to the marriage contract and by a conscientious use of his microscope.

In discussing gonorrhea it will be well not to lose sight of the fact that to no other single agent can be traced so many of what are known as diseases of women, and that practically all of these women have spent the first weeks or months of their infection under the care of the general practitioner; if they have done poorly, it must be charged against his inefficiency. Considering the number of radical surgical procedures that have been thought needed in gonorrheal infection, it does really seem that the general practitioner has been inefficient. Yet he can scarcely be blamed, in my opinion. He buys a copy of somebody's gynecology and finds many pages devoted to the subject, "How to curette the uterus." He finds in his book "steen" different kinds of endometritis. He finds whole chapters devoted to the technic of enucleation and resection of infected tubes. He has the merits discussed pro and con of the vaginal route as compared with the abdominal route, and he gets a scant chapter hurriedly written devoted to the treatment of the initial stages of the disease which is the commonest cause of all these procedures. This chapter differs in one book from another only in the favorite antiseptic. They each recommend the vaginal douche; it makes no difference whether the case is one of specific urethritis, vulvitis, vaginitis or metritis.

Some 4 or 5 years ago a careful worker and thoughtful surgeon in Chicago, A. J. Ochsner, by name, as a result of his observations of a great number of cases of appendicitis, evolved a plan of treatment that has saved a great many lives and has redounded to his honor over the whole world. The general practitioner who has made himself thoroughly conversant with the Ochsner treatment now knows what to do and what not to do when he is called to care for a case of appendicitis. This is really what he did *not* know before Ochsner's observations. It seems to me our gynecologists have been so taken up with "technic" of operations they have failed so far in elucidating anything of value in the treatment of the causal base, so to speak.

Gonorrhea in the female, as in the male, becomes a disease of grave import only when the deeper tissues of the genital tract are invaded. Specific vulvitis and urethritis are not dangerous to life nor do they in themselves do any permanent injury to the patient. I have been at some pains to get the estimate of writers on the question of the proportion of deep infections to the whole number of cases. I have not been able to find a definite percentage estimate, but would say, in a general way, the older authors seem to consider deep complications the exception, while the later authorities seem to consider it the rule, sooner or later, that there will be symptoms implicating the uterus and appendages. There must be a reason for this diversity of opinion, and I will revert to this phase of the subject later.

The question of the primary location of the gonococcus seems to be a matter of some dispute. Ashton, a late writer, gives the urethra, cervical canal and vulva, in the order named, as the primary foci of infection. All authorities are agreed that the primary involvement of the vagina is rare in the adult. From my experience I am inclined to deny that the cervical canal is ever the primary seat of infection.

Gonorrhea has been a detested guest of the human race for many centuries, but it seems to have acquired new terrors in the last 25 years. For instance, sterility is much more prevalent now than it was, say, 100 years ago. This is true in all highly civilized countries. There must be a reason for this. Gynecologists tell us that gonorrhea is the cause of sterility in the great majority of cases. I believe this is true. Now we know that gonorrhea has been common in western and southern Europe for at least 5 centuries, and the people of these countries, until the last half-century, have been the most prolific of races. That they have had gonorrhea and still had children is evidenced by other things; the great number of cases of ophthalmia neonatorum among them shows it, for example. Medical literature of that time proves that gonorrhea was almost as common 200 years ago as it is now, but no one thought of the race dying out on that account. The gonococcus has not changed its spots, but the customs of the people may change.

The diagnosis of gonorrhea is usually readily made in an acute attack. The patient complains of local irritation, tenderness and pain. The diagnosis is based upon the violence of the local inflammation, especially when it follows a suspicious intercourse. Involvement of the urethra is characteristic, as a rule, of the specific nature of the case, and inflammation of the inguinal and vulvo-vaginal gland is also suspicious. The presence of gonococci in the secretions confirms the diagnosis. The discharge after the first two or three days is profuse and purulent, and pressure on the urethra is followed by the appearance of a drop or two of pus at the meatus. There is seldom a rise of temperature, but generally a marked feeling of malaise, and if the infection has been virulent there is apt to be menorrhagia present. One fact that stands out clearly and is so stated definitely by all the authorities that I have been able to consult is that the vagina of the adult is never, or at least very rarely, the primary seat of infection. It will be well to bear this fact in mind when we discuss the treatment of specific infection of the female.

TREATMENT.

In the treatment of the gonococcus infection, something of value may be learned from the treatment of infectious diseases in general. Twenty years ago when the antiseptic idea was at its beginning it was thought by many physicians that it was possible to introduce antiseptic remedies into the system and actually kill the offending micro-organism wherever it was present. This idea has proved altogether erroneous, and in such diseases as typhoid fever, pneumonia, gastro-intestinal disorders and septicemia has been given up by those physicians who keep in touch with the advances of medicine. Even the local use of antiseptics is becoming more and more limited. In connection with this statement it will be of interest to quote Sir Almothe Wright, certainly an authority on matters pertaining to this phase of this subject.

In a lecture delivered before the Harvey Society, New York, Oct. 20, 1906, which may be found in *The Journal* of the American Medical Association, Aug. 10, 1907, in enumerating the methods we have at our

command for the treatment of bacterial disease under the head of "Chemical Antiseptics," he says: "Antiseptics have found in medicine a threefold application. They have been administered internally with a view to checking microbial growth in the blood or in regions which can be reached only by the channel of the blood. They have been applied locally with a view to holding in check and extinguishing localized bacterial infections. They have been used for the purpose of checking putrefaction, in discharges and devitalized tissues.

"Neither the first nor the third of these applications calls for any discussion. For some time past it has been all but universally recognized that it is futile to attempt to check bacterial growth in the interior of the organisms by our present antiseptics, which have a greater affinity for the constituent elements of the body than they have for any bacteria. . . . Attention may, therefore, be concentrated here on the issue as to whether or not the antiseptic applications are effective in holding in check and extinguishing localized bacterial infections.

"It is, of course, currently believed that this method of treatment is effective. It is in this faith that the surgeon introduces antiseptics into septic wounds or, when he happens to be so minded, into abscess cavities. It is in this faith that the physician resorts in the case of pulmonary infections to the use of antiseptic inhalations. And it is in this faith that the dermatologist, gynecologist, laryngologist, aurist and genito-urinary specialist are strenuous in the application of antiseptics each to the particular province of the body which he takes under his special care. It will be profitable for us to collate the facts and to consider whether or not there is in reality any trustworthy basis for the belief that inspires all this practice. Significant in this connection appears to me the fact that antiseptics are now by general consent abandoned in the treatment of ordinary surgical wounds. Significant also is it that the practice of introducing antiseptics into abscess cavities is now less and less frequently resorted to. *Significant, again, is it that treatment by antiseptics in case of bacterial invasions of mucous membranes is to-day more and more frequently followed up by curetting, scraping and so-called radical operations.*"

He further says: "Let me put the case as it appears to me. It is, of course, axiomatic that antiseptics can take effect only on those bacteria with which they come in contact. It is obvious, also, that in case of bacterial infections of the skin and mucous membranes the infecting bacteria will not all be lying on the surface and that they will not, when lying on the surface, be limited, with respect to their distribution, to those regions which are accessible to antiseptics. It follows, therefore, that it will be unreasonable to expect from any application of antiseptics anything in the nature of a complete sterilization. In every case there will remain a residue of surviving bacteria, and the survivors will inevitably multiply and reoccupy the disinfected surface. And this is not all. The antiseptic, as the unthoughtful assume, will not add its antibacterial power to the antibacterial power of the living organism. On the contrary, the antiseptic will directly antagonize the protective forces which the living organism has at command; it will paralyze the phagocytes and will abol-

ish the antibacterial power of the blood fluids. By the action of the antiseptic the disinfected surface will thus be left swept and garnished for reoccupation by the expropriated bacteria.

"Again, this is not all. The antiseptic application will also injure the histologic elements and in particular the capillaries of the tissues to which it is applied. It will thus lead to an outpouring of lymph from the disinfected surface. That outpouring will not only wash away the antiseptic, but when a skin surface is in question it will convert the natural dry and horny epithelial armor into a lymph sodden envelope which will be easily penetrable by bacteria."

I have quoted thus extensively from Wright's epoch-making paper because he is probably at this time the best authority in the world on the distinctive characteristics of pathogenic bacteria. I understand it was Wright's views on what I have dubbed the antiseptic idea that had much to do in leading him to make his celebrated discoveries. I confess that I read his article with great satisfaction for the reason that it confirms so many of the statements contained in a paper I read before this society four years ago in Peoria, entitled "The Influence of the Antiseptic Idea on the Practice of Medicine."

In laying down a treatment nowadays it is usual to say a few words under the head of prophylaxis. And this is very important in the disease under discussion. I think every general practitioner should explain to every adult female in the families under his care the important function of the vaginal secretions. Explain to them that this secretion, owing to the peculiar anatomical construction of the female organs of generation, is the principal protection they have against infection of the uterus, tubes and peritoneum. Tell them plainly that to wash away this secretion even with hot water is always attended with danger. This knowledge will probably prevent attempts at self-treatment which many of these patients try by way of a douche before seeing their regular medical attendant. Under the head of prophylaxis would come the acquainting of your clientele with the dangers attending illicit intercourse. Quite an effort now is being made by the profession in some places to educate the people up to the point where they will no longer desire or sustain illicit relations through fear of the consequences. I do not have much faith in the plan, and for myself I am quite willing to let the clergy retain their task along that line.

In considering the subject of treatment, I confess it is with a feeling of diffidence that I bring articles of impeachment against men who have made special study of the subject under discussion, and particularly when these men are a unit in their conclusions. But when I contemplate the results of this treatment; when I see every hospital in the country filled with the results of this treatment; when almost every day I meet on the street some hard-faced woman who has lost ovary and tubes because of the inefficiency of present methods, I feel impelled to "declare the faith that is in me."

In instituting treatment of specific infection of the female, I will ask you to bear in mind that, in common with other pathogenic bacteria, the gonococcus in itself is not injurious; it is the toxins generated by the

gonococcus that destroy the viability of the tissues with which they come in contact. Efforts to destroy the germ itself are only properly made as in other diseases to prevent contagion of uninfected individuals.

We have seen that either the urethra, vulva or cervical canal is almost always the primary seat of infection. If only the urethra and vulva are involved, any man should be able to see the danger that would be connected with using the antiseptic vaginal douche, and if the cervical canal be involved the utter uselessness of the douche so far as effecting a cure of the symptoms. There is another reason for not using the douche besides that of carrying the infection deeper. By its use the vaginal secretion is washed away, and of this secretion Doderlein says: "Because of the phagocytic action of the acid-forming bacillus of the vagina the gonococcus will not long survive." It is only when the vagina becomes, from the use of antiseptic, a "lymph sodden envelope," to use the words of Wright, that this function becomes suspended. The only proper treatment for this condition is rest in bed, if possible, and the local use of hot water in the form of sitz-baths. This method of treatment, which is simplicity itself, has resulted in a cure for me in all the cases I have had under my care during the last six years. There is not the slightest cause for worry about the copious vaginal discharge that usually occurs during the attack. It is the physiologic attempt of the vagina to destroy the invading bacteria.

When the patient has gained her immunity, as evidenced by a complete subsidence of all inflammatory symptoms, she is often able to infect her consort from the germs that still linger in the genital tract. The best method I have found to disinfect the parts is that used and highly recommended by Chappelle of Paris. He uses a "pure desiccated form of yeast known as cereviscine, which may be exhibited in the form of a pessary of cocoa butter filled with cereviscine and placed in position on going to bed, or it may be used as a paste made up with glycerite of starch. The quantity for application is not important, as it is perfectly harmless, but from 1 to 2 teaspoonfuls can usually be introduced and retained in the vagina during the night. I have used this preparation, a sample of which I show you, and I find it very effective as a disinfectant. I have found 3 to 5 treatments made about every third night quite sufficient to remove all germs.

If deep infection has taken place before the patient is seen, she should be put to bed in an open, sunny room after the manner of what is called the solarium method in the New York Lying-in Hospital. Especial attention should be given to her nourishment, bowels moved each day with large enema, as that will carry off much of the toxins formed each day, and I am convinced that purgatives do interfere with the immunization process. Patient should be kept quietly in bed until all inflammatory symptoms have subsided. The lower abdomen should be supported with zinc plaster before the patient gets up and about. This support undoubtedly promotes absorption of adhesions by preventing irritation from abdominal movements. Medicinally I have given with seeming benefit liquid nuclein (P. D. & Co.), dose 3ii in half a glass of cold water, 1 hour before taking food, 3 times a day. If the temperature

is high, I give quinin, gr. xx, at bedtime. These cases often become pregnant in the course of 1 or 2 years, showing complete recovery. There is no reason why any of them should become invalids.

At one time it was thought that all these cases of deep infection must pass through the hands of the abdominal surgeon before any hopes of their recovery could be entertained. That idea is even now on the wane, and all that is needed for its complete dissipation is that the general practitioner demonstrate his efficiency. Being myself a general practitioner, my fondest hope is that the demonstration may be accomplished.

SOME CONSIDERATIONS OF THE EFFECTS OF GENERAL ANESTHESIA FROM THE VIEWPOINT OF TO-DAY.*

E. MAMMEN, M.D.

BLOOMINGTON, ILL.

Over sixty years have elapsed since anesthesia was first purposely produced to secure immunity from pain during the performance of surgical operations. Since that time millions have been benefited by the discoveries of Wells, Morton, Warren, Simpson and others. During this period of time anesthetics have been administered by all sorts of persons, male and female, qualified and unqualified, scientific and ignorant, with truly wonderful results. That such powerful drugs as nitrous oxid, sulphuric ether and chloroform can be given to all kinds of patients under all possible conditions, with so small a mortality as the records show, truly is marvelous. There is, however, a mortality rate. There are results occurring every now and then which point out the fact that we are not as yet possessed of the ideal anesthetic, of a drug which can always be administered with perfect safety, and which produces analgesia and sleep from which no distressing or unpleasant symptoms arise. That such great scientific bodies as the American Medical Association, the British Medical Association and the American Surgical Association should recently devote much thought and time to this subject is further evidence that such an agent is still sought for, and also evidence of the dissatisfaction existing with many of the observed results of modern methods of inducing anesthesia. A number of deaths occurring in this community and a number of "close call" cases during a recent period of time is further evidence near at hand to all of us of the dangerous nature of general anesthesia, and calls for earnest consideration and careful study on the part of all of us. We recognize the fact that anesthesia interests every practitioner, whether he be a family physician, a specialist, a dentist or a surgeon. The subject is so broad and the details of its study so manifold that it calls for particular and conscientious care on the part of every one who administers anesthetics.

One of the first points to be settled in the administration of any drug is the size of the dose. Having determined its physiologic and therapeutic action, the dose to be given must and can be determined. This dose is of definite size, as it is introduced into the organism and

* Read before the McLean County Medical Society, Dec. 5, 1907.

is known or can be easily determined in reference to almost any agent. This statement, however, does not apply to such anesthetics as are taken by inhalation. The quantity used and the time employed in the inhaling process do not demonstrate the amount actually taken up by the tissues. Such an eminent authority as Hewitt, emeritus lecturer on anesthetics at the London Hospital, states that "our knowledge of the dosage of anesthetics is not sufficient to warrant any very definite pronouncement upon this point." With the great variation in methods and manner of administration, this matter becomes one of great difficulty. If the dosage is not known, it follows that an overdose is not readily determined. That an overdose has been employed in a given case may appear, but only after effects are apparent which are beyond the danger line.

Again, the same authority, in summarizing the general effect of anesthesia, states that "there is lack of definite knowledge along this line." It is agreed that anesthesia is brought about by some change of a physiochemical character within the protoplasm of the nerve cells. But whether this change is due to the "local effect of the agent itself on the cell contents, or whether some alteration in the blood produced by the anesthetic is the immediate cause of such changes, it is impossible to say." This question of "how" is, of course, important, but of greater importance is our knowledge of dangerous effects and the best means to be employed in avoiding them. It is quite well known that prolonged administration leads to lung complications, to degenerative parenchymatous visceral changes in the heart, liver and kidneys. This has led Bierly and other recent writers to point out the dangers of so-called "acid intoxication" after general anesthesia, and to attribute this condition to the inability of the kidneys to eliminate fatty acids and acetone whose toxic action leads to many postoperative fatalities.

From these and other considerations, for which the scope of this paper is too brief, it is readily seen that statistics as to relative fatalities are necessarily imperfect. Nothing has been said of the condition of patients, as to age, sex, reasons why anesthetics are given, kind of operations and duration of anesthesia. When these factors are considered we come to an endless variety of conditions that render fair statistics impossible. However, large numbers have been grouped. From these some deductions are possible. It appears that of all general anesthetics nitrous oxid is the safest when given with a proper amount of oxygen. Next to this stands ether, with chloroform as the most dangerous.

In McLean and Tazewell Counties, with 100,000 population, there were in three years not to exceed 3,000 anesthesias. This may be much overestimated, and probably is, yet we have against our balance sheet three deaths due to chloroform (1 to 1,000).

It has, of course, been found that the condition of the patient has important bearing upon his ability to bear anesthetics. While it is true that the robust and strong may bear anesthetics well, it is equally true that these very patients give rise to the greatest difficulties. The sick, the enfeebled, will often take the anesthetic quietly, gently and remain undisturbed from unpleasant after-effects.

It is a safe rule that all patients should first be carefully examined,

first as to history of alcoholic, tobacco or opium habits, and previous taking of anesthetics, and for what cause. Then the heart, lungs, veins, arteries, kidneys, urinary secretions, must be tested, including the presence or absence of acetone. There will be a proportion of cases who have been told that they can not take an anesthetic, a proportion of nervous, excitable patients; these persons must be especially watched at the beginning, just at the period when most fatalities have occurred. Valvular lesions, recent pulmonary lesions, nephritis, venous thrombosis, emphysema, are not necessarily contraindicative, but will abjure the administrator to caution. The state of the circulation, capillary and otherwise (arteriosclerosis), must be noted. It is now well known that the manipulations performed during an operation, and the region of the body as well as the particular viscera invaded, all have a most important bearing on the progress of anesthesia. A patient in shock, in collapse, can bear but little and will require but a small amount of anesthetic. The same is true of those with high temperature or if suffering from septicemia, uremia or sapremia. Operations upon the rectum will require profound anesthesia. Patients who have previously been insane may and do sometimes have a fresh attack. In those suffering from diabetes, coma is liable to supervene, and if acetone be present in their urine, as it frequently is, the danger is greatly increased. The urine of such patients also often contains diacetic and oxybutyric acid in addition to acetone, when such is the case the giving of an anesthetic is of course, completely contraindicated.

Extraneous conditions have much to do with success or failure, that is, with the ease and difficulty of effectively giving anesthetics. A cold, moisture-laden atmosphere will favor, noisy, excitable or busy attendants will hinder, while quiet, calm and cheerful confidence will favor rapid and easy anesthesia. Tight clothing and uncomfortable posture will hinder. Clothing or covering should be light, warm and loosely adjusted, while proper posture for the operation is to be assumed after the establishment of full unconsciousness and not during the partial imperfect stage. A faulty position may induce complications and render the progress of the operation difficult. If an operation is to be prolonged, hot-water cushions should be placed under the patient while hot-water bottles are supplied to his bed. The stertor, the stridor, the irregular action of respiratory movements, the acceleration or slowing of the pulse, are not always due to the manner, method and quantity of the anesthetic, as we are apt to suppose, but often to the manipulations of various organs in the progress of an operation. The anesthetist will wisely adapt his methods to the indications presented by these symptoms and so aid materially in the smooth progress of the whole procedure. It is also worthy of note, indeed of paramount importance, to note that hemorrhage, the exposure of large open surfaces, the excitement of important reflexes, the production of certain postures, may singly or combined produce shock during the period of the operation. There may be a sudden entry of air into veins, so much blood may gradually be lost as to produce tachycardia, pallor, coldness of extremities, with pulselessness. Infants, very old persons and anemic patients are more seriously

affected by loss of blood, and in all of these cases the amount of the anesthetic is an important factor. The more hemorrhage, the greater the anemia, the less anesthetic is required. When ether has been given to its limit, when an overdose is approached, respiration will show signs of failure. The pupils will become dilated, the skin dusky or pale, the eyelids slightly separated, the pulse less forcible, and it may be slower. In some cases a modified Cheyne-Stokes respiration will occur and become feebler and feebler. An occluded state of the air passages may be due to pressure from an enlarged thyroid isthmus, from a falling together of the aryteno-epiglottidean folds, or from the tongue pressing against the palate. When such conditions appear they can nearly always be met by successful means. The embarrassments of breathing during the beginning of anesthesia need give no cause for alarm. But later the tongue must be promptly drawn forward and the jaws opened while the anesthetic is for the time withdrawn.

Persons with arteriosclerosis run some risk of cerebral hemorrhage, though this is slight. In fact, the dangers mentioned here, and others, indeed many others, become of serious import only in a few, very few, cases. The careful administrator knows how to observe them and how to meet them when they occur, and so guides his patient safely through. It is the one case in several thousand that causes the trouble and serves to maintain the patients' fear and our own of the results of anesthesia, and it is precisely that case, the one that comes to us once or so in a lifetime, for which we must be constantly on the watch. But the dangers of the general anesthetic are not over when the operation is successfully accomplished and the patient safely in bed. We have no statistics on fatalities that occur then. We have some records of pneumonia, some of increased nephritis, of uremia and coma, and latterly some of acetonuria and acid intoxication. If these cases could be ascertained, arranged and tabulated the mortality from the taking of general anesthetics would be greatly increased.

It may be that this paper has not so far fully emphasized the influence of posture. Strange, but apparently well supported by such statistics as we have, 16 per cent. of immediate fatalities have occurred in operations about the eye and teeth (collected by the Royal Medico-Chirurgical Society). Some authorities attribute the latter fact to the position of the patient's chair, a position in which chloroform or ether should never be administered. During the last ten or twelve years observations on the ultimate effect of general anesthesia have been made which call for serious consideration. These have been made in reference chiefly to nitrous oxid, chloroform and ether. The first may practically be eliminated from the dangerous class in this regard, but ether and chloroform have both been followed by serious symptoms in from a few hours to as late as three weeks after administration. The symptoms are copious, violent and persistent vomiting of material that is sometimes like beef tea dregs, restlessness, screaming, delirium alternating with apathy. Leonard Guthrie of Edinburgh carefully studied these symptoms and after eliminating all other possible causes concluded that the anesthetic was responsible for them.

Brackett, Stone and Low of Boston, in 1904, showed clearly this danger in a paper called "Aciduria Associated with Death after Anesthesia." Their cases attributable to the anesthetic were marked by excessive vomiting, collapse, weak and rapid pulse, an absence of temperature until just before death, cyanosis, restlessness and apathy finally come. In these cases acetone was present in the breath and in the urine. The majority of cases occurred in healthy-looking, robust children, some of whom had operations of a minor character, such as the operation for web fingers. In seven of the operations reported the symptoms did not come on until twelve to twenty-four hours after the anesthesia. The marked postmortem lesion was fatty degeneration of muscles and liver. That this condition might have existed before administration is, of course, possible, but it has been shown by Becker and Bonn that decomposition of fatty antecedents leads to the production of acetone, and that anesthetics are destructive of fatty bodies in the organism. Moreover, Becker and Bonn showed from 1,500 anesthesias with different anesthetics, that acetonuria is usually produced by them. Fatty degenerations of liver and kidneys were usually present in postmortem cases. Scott, Carmichael and Beatty reported cases of delayed chloroform poisoning. They also show that fatty changes in tissue cells are rapidly produced by chloroform and ether, and that it can be so produced in perfectly healthy rabbits in a short time.

Again, Beesly (*Brit. Med. Jour.*, May, 1906) describes delayed chloroform poisoning resulting in so-called acid intoxication. The metabolic and symptomatic disturbances are similar to those described, the ultimate products of which is acetone. Beesly maintains that a certain degree of acid intoxication takes place after every operation in which a general anesthetic is given. He carefully examined the urine of a large number of patients after anesthesia. He found that both chloroform and ether invariably produced a temporary acute acetonuria. This same author states that the danger may be mitigated by the administration of sodium bicarbonate.

Whatever we have thought of the giving and use of anesthetics, and have measured their safety in immediate effects, is thus seen to be in need of revision. We must add to our conclusions in regard to this matter all the possibilities arising from delayed effects and add to the mortality ratio an unknown number. These considerations will lead to more precise methods in administration, to a lessening of the quantity used, to a shortening of the time of administration, and perhaps, wisest of all, to the employment of local methods in all those cases where they may be effectively used.

MODERN SURGICAL TREATMENT OF EXOPHTHALMIC GOITER.*

(A) ITS BASIS. (B) ANALYSIS OF OVER FIVE HUNDRED CASES TREATED OPERATIVELY. (C) CONCLUSIONS.

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CHICAGO.

So as to convey a definite conception of what we understand and of what we mean by the term "exophthalmic goiter," at the onset we will quote two definitions, one from a popular text-book of Practical Medicine, the other from an equally authoritative text-book of Practical Surgery.

(a) "Exophthalmic goiter is an affection, the chief symptoms of which are goiter, exophthalmos, tachycardia and tremor. In pronounced cases other symptoms, chiefly of a nervous nature, are present."[1]

(b) Exophthalmic goiter is a disease characterized by an enlargement of the thyroid gland, palpitation and increased frequency of the heart's action, by proptosis, fine tremor and general nervousness.[2]

By goiter we understand an enlargement of the thyroid gland, which may be symmetrical, involving the entire structure, or which may be partial, as nodules and cysts. Murray[3] noticed an enlargement of the thyroid body in 172 out of 180 cases. In five of the remaining cases there has been goiter at an earlier stage of the disease. Kocher (Berne, Switzerland), says that he has never seen a well developed case without a goiter. Mayo (Rochester, Minn.) says that in those cases in which there is an apparent absence of goiter a careful examination will usually disclose a small unilateral or bilateral tumor, which lies deeper but is firmer than normal thyroid tissue. It is not the mere size of the gland which is of importance, but its structural alterations. The enlargement of the gland, according to the same author, is generally uniform. This is contradicted by equally good observers and is contrary to my observations. Thomson[4] describes severe and fatal cases in which both goiter and exophthalmia have been absent. According to some authors, exophthalmia is entirely absent in about one-fourth of the cases. It is further to be remembered that the symptoms do not appear in any regular order. We must also bear in mind that these symptoms vary in relative degree in different cases. Tachycardia of a permanent character is the most constant symptom of this affection. By tachycardia, we wish to denote a disturbance of the action of the heart which is expressed in increased frequency. The tremor in this condition is rapid and vibratory, there being as many as eight or ten vibrations per second. It is important to remember that any individual symptom of exophthalmic goiter may be inconspicuous, or may be absent, during a part or the entire course of any individual case of the disease.

There are primary and secondary forms of this affection. From an

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etiological, pathological and therapeutical standpoint, the classification into primary and secondary forms is consistent and valuable. In the primary form, there is a concurrent development of the goiter and of some of the other symptoms characteristic of this affection. In the secondary cases, the symptom-complex of this affection is grafted upon a pre-existing enlargement of the thyroid body. All varieties of goiter, irrespective of size, type or state from simple cysts to malignant tumors, may be associated with the symptom-complex of exophthalmic goiter, and it is further to be noted that, in all the secondary forms excepting those associated with malignant disease, the prognosis of surgical intervention is better than in the primary form both as to recovery from the operation and as to recovery from the disease (Dean Lewis).[5]

In our perusal of the literature, the frequency with which diagnostic errors concerning this affection are made surprised us. It is often thought to exist when absent. Pulsating exophthalmos, a totally distinct malady, seems to have been the most frequent source of error. Many operators do not seem to have differentiated between operations for ordinary goiter and those for exophthalmic goiter, either of the primary or secondary forms. In a discussion on treatment these two conditions must be considered almost separately. Many of the tables that are constantly referred to in literature on this subject are, owing to their diagnostic errors, honeycombed with inaccuracies.

Authors are not in accord, either as to the etiology, or as to the primary pathological cause of exophthalmic goiter; therefore, the treatment most appropriate for this affection is still a matter of discussion.

Owing to the fact that the ultimate cause of this affection is still a matter of speculation, theories have been advanced and have been used and are still used as foundations for apparently appropriate lines of treatment.

The following theories have had, and still have, advocates: (a) The cardiac theory; (b) the compression theory; (c) the sympathetic theory; (d) the nervous theory; (e) the parathyroid theory; (f) the thymus theory; (g) the thyroid theory. We will discuss some of these theories and then adopt as a working basis that theory which is least in conflict with facts.

THE CARDIAC THEORY.

Tachycardia palpitation, thrills and murmurs in the cardiac region, displacement and diffusiveness of the apex beat, increased area of cardiac dulness, due to dilatation or hypertrophy, and other symptoms of a cardiac nature, led many of the early observers such as Parry, Stokes, Graves, Luton, and Beau, to think that the cause of this affection originates or resides in the heart. The cardiac theory is defective because:

1. Those cardiac disturbances that occur in exophthalmic goiter can and frequently do occur independently of this disease, viz.: toxic palpitation and essential tachycardia.

2. They can occur as symptoms in conditions totally distinct from exophthalmic goiter.

3. Cases of exophthalmic goiter occur in which they are absent.

4. The cardiac disturbances met in this affection are not exciting factors. They are due to coexisting or to complicating functional or organic diseases of the musculature or of the various valves of the heart. We must not forget that long continued, excessive, rapid action of the heart may beget organic changes in this organ.

5. In by far the largest number of cases of exophthalmic goiter that have come to the autopsy table, an absence of cardiac lesions has been noted. In some cases, moderate hypertrophy with or without ventricular dilation and endocardial disease was present. The dilatation of the heart has been ascribed to its quick action. The systole of the heart is too short to be complete; residual blood gradually entails overdistension and dilatation.

6. The cure of exophthalmic goiter does not cure any of the coexisting organic cardiac lesions. Kocher reports two cases of exophthalmic goiter coexisting with mitral insufficiency. The symptoms of exophthalmic goiter were cured by a partial thyroidectomy. The symptoms of mitral insufficiency were uninfluenced and persisted. This shows the non-interdependence of the two conditions.

THE COMPRESSION THEORY.

When Tillaux performed his first thyroidectomy for the relief of exophthalmic goiter, he believed that the compression exerted by the hypertrophied thyroid gland on the important vascular and nervous structures at the base of the neck was the determining cause of this disease. His patient recovered from the operation and from the disease, but the explanation which he advanced was erroneous. He later abandoned the compression theory. It has had many and still has a few eminent advocates. It is untenable because:

1. It is hard to understand how unilateral compression (the thyroid enlargement may be unilateral, though it is more frequently bilateral) can cause bilateral exophthalmos.

2. How unilateral enlargement of the thyroid body can cause unilateral exophthalmos of the opposite side of the body as in the cases reported by Panas and by Gros, etc.[8]

3. Why, if compression were the cause, the symptoms bear no relation to the degrees of the thyroid enlargement. It is an acknowledged fact that in some cases of great severity it takes the most precise and painstaking palpation to detect any enlargement of the thyroid gland. The severity of the toxemia in Graves' disease seems to bear no relation to the degree of thyroid hypertrophy.

4. Why, if upon any of the neighboring nerves compression be exerted by the enlarged thyroid gland, the recurrent laryngeal nerves which, by virtue of their anatomical relation, would be the ones involved most frequently, are so uncommonly in this affection the seat of compression paralysis? They are involved far less frequently than in cases of simple goiter, in which paralysis of one or of both recurrent laryngeal nerves has been observed and commented upon quite commonly.

5. Why do not massive tumors at the base of the neck determine

exophthalmic symptoms? Why is it that large parenchymatous or cystic goiters can exist for years and never be productive of or be associated with the symptom-complex of this disease? If compression were a determining factor of this disease, its action would be invariable. Under like conditions, it would produce like results.

6. If the symptoms were due to pressure, they would disappear immediately and completely on the removal of the compressing agent. We know that they do not thus disappear.

THE SYMPATHETIC THEORY.

This theory was advanced by Kobens, defended by Trousseau, Oppenheimer and others. Only a few clinicians now advocate it. Disturbances of the sympathetic system with or without structural change can explain some of the symptoms of this disease. They fail to explain many. Observers of note such as Abadie, Jaboulay, Jonnesco, etc., have looked upon the cervical sympathetic trunk and its ganglia as the primary seat of the disease, as the *fons et origo mali*. In the primary forms of the affection, some have advised, and the last three individuals mentioned have devised and performed operations upon the sympathetic nerves for the relief of primary exophthalmic goiter. Jaboulay, in some cases of primary exophthalmic goiter, performs a bilateral division of both cervical sympathetic nerve trunks. Jonnesco, in the primary forms of this affection, performs a complete resection of both cervical sympathetic trunks, including the upper and middle, and the lower cervical ganglia. The value of these operative procedures has been much contested. The uniformly good results obtained by their originators have not been obtained, nor even been approached, by other equally dextrous and competent operators. Operations on the sympathetic for the relief of the primary forms of exophthalmic goiter have fallen into almost complete disuse, not on account of any difficulty of execution, but because of their therapeutic inefficacy. They have never been advised for the secondary forms of the affection.

Boisson (Thèse de Paris) collected all the cases of exophthalmic goiter that he could obtain up to 1898, for the relief of which an operation on the sympathetic ganglia had been performed. He collected 27 cases and analyzed 23, as the other four, for one reason or another, prove nothing. In these cases there were three complete cures, eight marked improvements and three deaths. His conclusions are: "Successes are rare. In cases benefited it is sometimes one symptom, sometimes another, which is improved, and the improvement is sometimes immediate, sometimes late, sometimes there are relapses in the improvement. Neither by division nor excision, total or partial, have more brilliant results been obtained. From the physiological point of view, all is chaos. There is no relation between the phenomena noted by the surgeons and those observed by the physiologists; the surgical effects are also in discord with one another." Schiff, in his experiments, noted that no effects on the thyroid gland followed the section of the sympathetic cervical nerves.

So many observers have examined the cervical ganglia in this disease

that it is quite impossible to refer to them all. In a certain number of cases, lesions of the sympathetic nerves have been reported. The changes were such as are often found in many other diseases, such as are often found in health. Abadie, one of the most ardent advocates of the sympathetic theory, says: "The nervous sympathetic trunk is neither diseased nor degenerated; its tissue is intact and does not show any lesion." However, he gives no detailed report of observations. Hale White[9] has shown by a careful series of investigations on patients dying from other causes that variations in the size and in the vascularity of the cervical sympathetic ganglia, as observed by the naked eye, have no significance; that the cellular elements are found in such various degrees of number and integrity, and that the fibrous stroma is so variable in quantity as to prevent any definite statement. He further says: "This evidence (his observations and those of others) seems to me conclusively to show that the lesion is not in the sympathetic nerves."

The only recent observer that has found positive changes in the sympathetic cervical ganglia is Greenfield.[10] The changes which he noted are not characteristic. In two cases examined, he found these ganglia to be swollen, markedly hyperemic and infiltrated with leucocytes.

Degenerative changes in the ganglion cells were present. Ehrich[11] is of the opinion that what degenerative changes have been found in the sympathetic nerve are purely secondary. The only changes which he found were vacuolation and fat droplets. In Temoin's case[12] microscopical examination of the sympathetic cervical ganglia showed nothing definite. Numerous observers of great competence and acuity of observation report negative findings. Achard and Joffroy examined the cervical sympathetic ganglions in four cases of exophthalmic goiters and found them absolutely normal. Ranvier examined one case; his findings were the same. The observations of Marie and Marinesco, of Mendel, of Joffroy and Achard taken in connection with those of Wilks, of Barth and of Dejerine, suffice to convince one that exophthalmic goiter is not due to organic disease of the sympathetic nervous system.

If we assumed that this disease is dependent on a functional involvement of the cervical sympathetic trunk and its ganglia, we could not satisfactorily explain why in the same nerve trunk there is a stimulation of some fibers, depression of others and functional integrity of the remaining fibers. Dilatation of the pupil, which is perhaps the most constant symptom of stimulation of the cervical sympathetic nerve, is notably absent in Graves' disease. The fact that there are no invariable ocular or pupillary symptoms or signs further argues against the primary involvement of the sympathetic as being the cause.

THE NERVOUS THEORY.

This is supported by Sattler, Putnam, Mendel, etc. Owing to its apparent sudden onset, to its frequent occurrence in individuals of the same families, be they ascendants, descendants or collaterals; owing to its far more frequent occurrence in women, and to the fact that the sufferers of this affection frequently belong to neuropathic families in

which cases of epilepsy, hysteria, chorea, or even some form of insanity have occurred, owing to its frequent association with nervous affections of a functional or organic nature, such as hysteria, neurasthenia, tabes dorsalis, syringomyelia, epilepsy, etc., and also to the many nervous manifestations of this disease, such as tremor, general nervousness, mental disturbances, paresis and paralysis, etc. (These patients are almost invariably nervous, capricious, hysterical and poor sleepers.) Many clinicians have been led to believe that this affection is dependent upon either a functional or an organic disease of the cerebrospinal nervous system. If we consider this affection a neurosis, that is, a nervous disease having no demonstrated organic basis, we will have to classify it among such functional nervous diseases as hysteria, chorea, neurasthenia, etc. "We can not so consider it, as we know that this disease is always associated with definite histoanatomical changes in an organ not belonging to the nervous system."

W. Edmunds[13] and other investigators have found that the nerve lesions of exophthalmic goiter are extremely uncertain. In those cases where changes in the nervous system existed the lesions found vary considerably in the different cases, though definite enough in each case. The lesions are inconstant, are not characteristic. We acknowledge that many of the symptoms clearly show that the normal functions of the nervous system are deranged, but similar disturbances occur in other toxemic states, in other intoxications, and, in the absence of their constant presence in every case of exophthalmic goiter and of the constant association with some organic lesion of the nervous system they can not be adduced as evidence of a nervous cause of the disease. No constant change in the peripheral nervous system has been noted. Mueller and several other observers have occasionally found changes in the pneumogastric and in the recurrent laryngeal nerves; a few degenerate fibers being present in these nerves. As a rule, however, these nerves have been found normal. Mueller decided that the degenerative changes in the vagus nerve were secondary. Sir Victor Horsley noted in his experiments that the division of the recurrent laryngeal nerves was without effect on the thyroid gland.

In those cases where the disease has coexisted with an organic disease of the spinal cord, such as tabes dorsalis, at the postmortem table, there will be found the anatomical changes characteristic of that organic disease. In the cases of exophthalmic goiter not complicated by an organic spinal cord disease, there is noted in the spinal cord a total absence of demonstrable changes.

Exophthalmic goiter is not due to a constant and characteristic nervous lesion, demonstrable in every case. Postmortem observations teach us that in most cases of this disease there is a total absence of anatomical lesions in the cerebrospinal and sympathetic nervous systems, that is, of such lesions as can be revealed by our present methods of examination.

THE PARATHYROID THEORY.

Not much is known concerning these bodies. A great deal of specula-

tion concerning their functions, and also concerning the results of pathological changes in them, has been indulged in. They are four in number, two on each side. They contain no follicles, no colloid substance and are composed of epithelial cells. It has been suggested by some (Edmunds, MacCallum) that exophthalmic goiter might be dependent upon the absence of the glandulæ parathyroidea, or upon functional or structural disturbances present in one or more of them. We can not for the time being adopt the parathyroid theory as a working basis, because:

1. Our knowledge concerning the physiology and pathology of these glands is as yet too limited.

2. Parathyroid therapy is useless in this affection. Walsh[15] came to the conclusion that there are no grounds for the idea that insufficiency of the parathyroid plays an important part in Graves' disease.

3. The changes that have been found in some parathyroid bodies removed from exophthalmic goiter patients have also been noted by Walsh, Humprey, Berkley and MacCallum, after death from other diseases.

4. In nine cases of exophthalmic goiter in which the parathyroid bodies were examined microscopically by MacCallum,[16] they were found practically normal, there being at most, in a few of the cases, only a slight diminution in the size and an increase in the fibrous stroma.

Shattuck examined microscopically parathyroids obtained from exophthalmic goiter patients. He found nothing abnormal in them. Benjamine[17] examined the glandulæ parathyroidea in sixteen simple and three Basedow's goiters, without finding any noteworthy change. "I have had opportunity to examine about 100 presumably normal parathyroids collected by Dr. D. Ferguson and Dr. Rogers in this laboratory (Cornell Univ. Med. Dept.) and find that the variations in structure of the glands and in the integrity of the cells cover a range rather greater than that reported by most observers and quite as extensive as that so far observed in Graves' disease." (Ewing).

THYMUS THEORY.

This theory as an explanation of exophthalmic goiter was suggested by the following facts:

1. In some of the cases of exophthalmic goiter that have come to the autopsy table, this organ was found to be hypertrophied. Dinkler, Joffroy, Soupault,[18] Möbius, Spencer, Marie and other authors have commented upon this marked hypertrophy, and have noticed that it is most always associated with great vascularity of the organ. In one of Shepherd's cases (*Jour. Am. Med. Assn.*, 1906, vol. xlvii, p. 667) not only was the thymus gland enlarged, but also both suprarenals showed excessive enlargement.

2. Some cases apparently have been benefited by the use of thymus gland substance, or of some of its preparations.

Our non-acceptance of this theory is based on the following facts:

1. Our knowledge of the physiology and pathology of the thymus

gland is as yet too limited. Very little is known concerning the functions of this organ.

2. Thymus therapy, in the opinion of by far the greater number of clinicians, is useless in the treatment of exophthalmic goiter.

3. Exophthalmic goiter occurs in the absence of hypertrophy of the thymus.

4. Hypertrophy of the thymus occurs in the absence of exophthalmic goiter.

5. The thyroid theory offers a far better working theory.

THYROID THEORY.

Though it has not been demonstrated beyond scientific contradiction that in the thyroid gland is to be found the sole primary cause of the disease, we are believers in the thyroid theory because:

1. There is present some structural alteration of the thyroid body in all cases of exophthalmic goiter. This applies to the secondary as well as to the primary forms of the disease. Most of the recent observers have come to the conclusion that the histology of the thyroid gland in primary Graves' disease is in many respects specific.[19] "We must not conclude that because we can not detect any enlargement that, therefore, the gland is not diseased; it always is."[20]

2. Because exophthalmic goiter is the direct opposite of myxedema in symptomatology, in pathology, and in therapeutical indications.

3. Because the symptomatology of this disease can, to a certain degree, be determined by the ingestion of large doses of thyroid gland substance or of its various preparations.

4. Because all medical or surgical measures which tend to decrease the functional activity, or lessen the volume of the gland, also tend to lessen the severity of the symptoms or to arrest them. Schultze says: "Clinically, it makes no difference whether the secretion of the gland is increased or altered, or is altered chemically as the result of changes in the blood, in the alimentary canal, or in the central nervous system, the fact remains that the removal of the growing gland does away with the symptoms, and upon failure to remove the diseased glands depends the failure to cure." Incidentally we may say that the surest and most efficacious way of reducing the volume of the thyroid body is by removing a portion of it.

5. Because in the cases which we have collected and which we report, recovery from the disease, in rapidity and completeness, has been in proportion to the extent of gland tissue removed, short of its entirety.

6. In those cases where the symptoms recurred, recurrence was associated with and seemed to be dependent upon hypertrophic changes in the remaining portion of the gland. Recovery should be secured by a second operation, and was secured in those cases that submitted to a secondary operation.

7. Because the symptom-complex of this affection finds its most satisfactory and its most consistent explanation by considering the condition a general toxemia, the result of quantitative or qualitative

changes, or both, in the secretion of the thyroid gland. The tachycardia, the mental changes, the sweating, the prostration, the increase of body temperature, the diarrhea, are all symptoms that we find in other intoxications. It is perfectly possible for the gland to show a great hyperactivity without actual enlargement, as, for example, the salivary gland in a state of salivation.

The anatomical changes noted in the primary and secondary forms of this disease are unlike, so unlike that they of themselves make imperative the classification of the disease into primary and secondary forms.

In the secondary cases, we agree with Dean Lewis,[5] when he says that the goiter in the secondary forms does not differ in structure from the simple parenchymatous, or other goiter, upon which the Basedow's symptom-complex is grafted. Exophthalmic goiter has been observed in simple goiter, in fetal adenomata, in cysts, and in carcinoma of the thyroid gland (Bloodgood, Ehrhardt). It has been thought that small tumors of the thyroid gland, the seat of secondary Graves' disease, act as irritants, causing an over-activity of the gland, much as a foreign body in the eye will produce an excessive secretion of tears, and the removal of this source of irritation by operation has been followed by a complete relief of the symptoms.

In the primary form of Graves' disease, definite pathological changes are constantly present in the thyroid gland. Kocher and Reinbach, Brissaud and Langhans, have denied the above statement, but the existence of these changes has been confirmed by so many competent observers that their occurrence can no longer be contested (Greenfield,[10] Askanazy, Soupault,[18] Haemig, Aubarsch, MacCallum[22] and Ehrhardt).

In 28 primary cases of exophthalmic goiter, MacCallum found changes present in the thyroid gland in each instance, although all the glands and all parts of the same gland were not equally involved in all the cases. It is well to bear in mind that changes may occur in one portion of the gland and be absent in another. Dean Lewis examined carefully the thyroid gland in four cases of primary exophthalmic goiter, and his findings agree practically with those of Greenfield, Edmunds, MacCallum, etc. What are these changes which are considered as constant and almost characteristic?

1. Changes in the follicles which are increased in number and which are also changed in size and form. Instead of appearing round or square, when examined microscopically, they appear branched and stellate. Dr. Rodocanachy[22] noted an increase in the number of alveoli, proliferation of the epithelium and changes in its character. These presented the appearance of a gland which is working at high pressure. We find an increase in the secretory tissue, for the number of alveoli is increased and the epithelial cells themselves, instead of being cuboidal, are columnar. Dean Lewis says: "It seems as if the proliferating epithelium, following the lines of least resistance, had grown into the follicles. The connective of the follicle is also invaginated so that in many sections the invaginated epithelium with its connective tissue stalk resembles an intestinal villus." In other parts of the gland, the follicles are unusually small.

Many of the follicles contain desquamated epithelial cells. The secreting area of the vesicles is increased by ingrowths from their walls.

2. Changes in the character of the epithelial cells. The cells are changed from the cuboidal to the cylindrical, columnar type. The epithelial proliferation may be so great that alteration of the shape of the cells results from mechanical pressure (Edmunds). Many of the cells are in a state of fatty degeneration (Virchow).

3. Qualitative and quantitative changes in the colloid. The colloid is greatly diminished in amount; it may be absent. This change, however, also has been noticed in the thyroid gland of patients dying from other diseases. Some of the vesicles, instead of containing colloid, are filled with cells. Is this disappearance of colloid due to lessened secretion, or does it result from more active removal by the lymphatics? That is still an unsettled question.

4. Increase in the vascularity. The blood vessels are distended and are increased in size; the friability of their walls has been noted and commented upon by many operators (Kummel, Kocher, Mayo). This friability increases the liability to primary and to secondary hemorrhages. In this, as in all other hyperplasia, the enlargement of the nutrient arteries is very evident. No adequate idea of the vascularity of the gland is gained from inspection of the specimen after death, but at operation it is found to be extraordinarily rich in widely distended vessels. This is especially noticeable in the veins.

5. Changes in the connective tissue. There is an increase in the amount of connective tissue. In some cases this increase in connective tissue causes a lobulated appearance of the tumor. The fibrous septa of the gland may show some thickening at a comparatively early date. All the above mentioned histological changes may exist in small foci and not throughout the entire gland. Probably this explains why, in some instances, they have escaped the observation of investigators.

CONTRAST EXISTING BETWEEN EXOPHTHALMIC GOITER AND MYXEDEMA.

The thyroid is an organ essential to the integrity of the human organism. In the absence of accessory thyroid gland or glands, the spontaneous or gradual arrest of function of this body, or its total destruction by disease, or its ablation by the surgeon, will almost, if not invariably, be followed by myxedema either acute or chronic in type. Postoperative tetany and myxedema are identical, as far as their etiology is concerned, one condition often develops into the other (von Eiselsberg).[1] Tetany, it would seem, according to the latest investigations, is a condition of parathyroid insufficiency. Mayos (Rochester, Minn.), to avoid removing all the glandulæ parathyroidea, save the posterior capsule of the thyroid gland. They also lessen thereby the liability to injury of the recurrent laryngeal nerve.

The development of impending myxedema can be prevented, its manifestations controlled either by the successful transplantation of thyroid tissue in another part of the body, or by continual injections of thyroid (Vassale) or by prolonged feeding of thyroid gland (Lanz, Can-

ter).[24] The above facts are accepted as proofs that myxedema is a disease due to insufficiency or to absence of normally functionating thyroid tissue in the system.

The demonstration of the fact that in exophthalmic goiter we have a disease which is the diametrical opposite of myxedema in symptomatology, pathology and therapeutical indications, will aid to give credence to the thyroid theory. Let us consider the evidence that contrasts the two diseases as to the

ESSENTIAL SYMPTOMS.

Exophthalmic Goiter.	Myxedema.
1. Enlargement of the thyroid gland (almost always present).	1. Atrophy or absence of the thyroid gland (is mentioned in all the reported cases).
2. Exophthalmos (a cardinal symptom).	2. Recession of the eyeball not uncommon. In cases not consecutive to exophthalmic goiter, exophthalmos is never present.
3. Frequent presence of other ocular symptoms as von Graefe's, Dalrymple's, Stellwag's Jellinek and Rosin's, Gifford's,[25] etc. Eye symptoms are of great diagnostic value, chiefly by way of confirmation.	3. Absence of ocular symptoms.
4. Excitable and mobile pulse, palpitation, tachycardia. Permanent tachycardia is more commonly met in exophthalmic goiter than in any other affection.	4. Sluggish heart action. Bradycardia, a common symptom.
5. Exophthalmic goiter tremor (cardinal symptom). Murray noticed tremor in 111 cases out of 120.	5. Myxedema absent, except in its rare occurrence in tetany.
6. Agitation, insomnia, irritability, excitability. A peculiar mental condition of nervousness is a symptom common in exophthalmic goiter.	6. Apathy, somnolence, dulness of apprehension and of perception.
7. More or less profuse perspiration. Skin fine, soft, moist and warm. Feel better in cold weather. Diarrhea frequent.	7. Absence of perspiration even in the warmest weather. Myxedematous skin. Patients always feel cold. Constipation common.
8. Typical myxedema may supervene on the subsidence of an equally typical exophthalmic goiter.	8. Myxedema never precedes exophthalmic goiter.

AS TO PATHOLOGY.

Exophthalmic Goiter.	Myxedema.
1. Glandular hyperplasia, increase in number of follicles.	1. Follicles are markedly diminished in number; may be absent. In cases where gland is not absent, there is noticed a progressive glandular atrophy.[26]

AS TO THERAPEUTIC INDICATIONS.

Exophthalmic Goiter.	Myxedema.
1. The ingestion of thyroid preparations is almost always harmful. It aggravates the symptoms.	1. The continual ingestion of thyroid preparations is positively curative.
2. All the measures which tend to lessen or diminish the amount of thyroid secretion are followed by improvement.	2. Implantation of gland tissue if the latter maintains its integrity is curative.

The symptom-complex of this affection can to a certain degree be determined by the ingestion of large doses of thyroid gland substance, or its various preparations. Our knowledge of the physiological action of thyroid gland substance, or its preparations, is still limited. Tachycardia and increased metabolism constantly result from their ingestion. Toxic doses will cause such symptoms as rise of temperature, insomnia, agitation, polyuria, albuminuria, complete paraplegia, etc., etc.

These symptoms we meet also frequently in cases of exophthalmic goiter. The fact that the symptom-complex of this affection can be experimentally determined, produced by the ingestion of thyroid preparations, is no longer contested. In our opinion, it forms another important link in the chain of evidence supporting the thyroid theory.

Cunningham administered daily, by mouth, to a rabbit 1 gram of thyroid extract; it caused exophthalmos. Lawford has reported one case of exophthalmos due to thyroid feeding. Edmunds[27] found that feeding dogs and monkeys large amounts of thyroid substance could bring on exophthalmos, tachycardia, loss of weight and wasting. Murray[28] obtained similar results. Nothaft[29] reports a case of a patient who took 1,000 five-grain tablets of thyroid extract in five weeks. He developed all the symptoms of exophthalmic goiter; upon cessation of the drug, all symptoms promptly disappeared, with the exception of the struma and exophthalmos, which persisted for six months and then gradually disappeared. Doyen performed a partial thyroidectomy in a case of exophthalmic goiter; cure resulted. For some reason or other the patient took some tablets of thyroid extract, the symptoms recurred. With suppression of the drug, the symptoms subsided. Béclère[30] observed the development of the symptom-complex of this affection in a myxedematous woman, who had taken at the beginning of the treatment 92 grams of thyroid extract in 11 days. The drug was discontinued, the symptoms disappeared.

SUMMARY.

Kurt, Schultze, Kocher and the Mayos (Rochester, Minn.) have analyzed their respective cases and we will merely cite their results, for which the reader is referred to their publications. Their combined cases make a total exceeding 270. Since the completion of 1906 the Mayos (Rochester, Minn.) have operated on 100 additional cases with increasingly felicitous results.

A critical analysis of the other reported cases, the authenticity of each of which has been verified by reference to the original report when accessible (when not to a reliable report), taken in connection with a study of the voluminous literature of the subject, has convinced me that the following conclusions are justified:

1. Thyroid gland substance, or any of its preparations, should never be administered in the treatment of exophthalmic goiter. Their use in that disease is irrational, and is almost invariably attended by an aggravation of symptoms.[33] Their use invariably increases the dangers of operative interference. Kocher: "Even patients suffering from simple goiter have an especial susceptibility to thyroid extract."

2. As a therapeutic agent in the treatment of exophthalmic goiter, thymus gland substance and its various preparations are useless. Their use is at times attended by an aggravation of symptoms.[33a] They can not be considered curative agents.

3. Parathyroid extract as a curative agent of exophthalmic goiter has no efficacy (J. J. Walsh).[15] MacCallum[16] says that the alterations noticed in the glandulæ parathyroidea do not seem to be constant or sufficiently extensive to support the idea that the parathyroids have anything to do with the development of the disease known as exophthalmic goiter.

4. The medicinal treatment of the disease which we are considering is, the use of belladonna being excepted, in reality, largely symptomatic. For the anemia, arsenic has been given; for the nervousness and restlessness, the bromids; for the tachycardia, digitalis, strophanthus, etc. All of these agents are palliative, not one has ever proven to be always curative. Some cases are benefited by medicinal treatment. Some cases recover spontaneously. All forms of medical treatment of this affection, be they hygienic, dietetic, medicinal, organotherapic or electrical in nature, are very frequently unsatisfactory, are very frequently disappointing. Their comparative powerlessness has induced surgical endeavors to cure the disease. There is not any form of medicinal treatment which has been successful with sufficient frequency to carry conviction of its worth. "Out of 40 cases medicinally treated, in which the patient was seen from time to time, or information obtained as to the nature of the disease, 7 died, 2 remained stationary; out of the other 31, only 9 practically recovered" (Murray).[28] Cases are reported in which it is definitely stated that the various forms of medical treatment were of no avail.[34] All of these cases were ultimately subjected to operation. One case[34e] died of "acute thyroidism." In all the other cases, operation was followed either by amelioration of symptoms or by complete cure.

5. Serum therapy of exophthalmic goiter is as yet in an experimental state. The various sera may be considered as palliative remedies. The results attending the use of "thyroidectin" are not invariably satisfactory. Miller,[31] Billings[31] and others have had failure attending its employment. Their use is not devoid of dangers. In some of the cases reported, after failure attending the use of thyroidectin, partial thyroidectomy was followed by cure (Hecht, Ries, Rogers).

6. It is now a demonstrated fact that all operative measures which tend to lessen the secretory activity of the thyroid gland or to diminish the amount of thyroid gland tissue present in the organism, are of value in the treatment of exophthalmic goiter. That method must be chosen which at the time seems the least dangerous without sacrificing chances of success. In one case[34a] caustics were injected into the gland to induce necrosis of a part of the parenchyma. This procedure is not to be recommended, owing to its inherent dangers. In this case, however, Jones obtained a cure. Ollier[35] injected tincture of iodi into the thyroid gland. He obtained a permanent, almost a complete, cure. Intraglandular injections are unsafe in exophthalmic goiter. There is danger of sepsis, of injecting the irritant agent into the blood vessels, of provoking alarming hemorrhage into the gland (alarming through the compression that it may exert upon the respiratory passages).

The ligation of the thyroidal arteries in this disease was first recommended in 1886 by Woffler. It has been practiced by operators of such eminence as Roux, Rydigier, Kocher, etc. It is now used only as a preliminary or as an accessory step to partial thyroidectomy. In a number of cases[36] two or more of the main thyroid arteries were ligated. In one case[36a] there was immediate improvement following the ligation of the four arteries. Patient, nevertheless, died from relapse two months after the operation. All the other cases, excepting one,[36h] were either permanently improved or permanently cured. This case,[36h] in whom both superior and inferior thyroid arteries also had been ligated, died six months after the operation from some unknown cause. The ligation of the four thyroid arteries is liable to determine gangrene of the thyroid gland, is liable to induce thyroid insufficiency. This has occurred to such an authority as Kocher (see Kocher's cases).[37] Rydigier and Trendelenburg have each had cases of acute tetany follow ligation of the four vessels. Hence it is not to be performed. Kocher does not do it any more, as he fears that cachexia strumapriva may follow its performance. The objections to the ligation of two or three of the thyroid arteries as a routine treatment of exophthalmic goiter are the following:

a. It is a procedure often difficult of execution, the hypertrophied thyroid gland having altered the anatomical relations of the part; the infiltration of the tissues also adds to the technical difficulties. The

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NOTE.—By serum therapy of exophthalmic goiter is meant the employment of either (a) the serum of thyroidectomized animals or (b) the serum of animals treated with increasing doses of thyroid extract, or (c) milk in the dried or liquid form, of thyroidectomized goats. With the use of these different sera, authors report failures and successes.

ligation of the vessels is especially difficult in the retroclavicular or retrosternal varieties of goiter.

b. Owing to the greatly increased vascularity of the organ, branches of the thyroid arteries are liable to be mistaken for the trunks of the vessels.

c. It does not secure as complete or as permanent mitigation of the symptoms as partial thyroidectomy, and it is, we believe, equally difficult to perform. Ligation of the inferior thyroids is just about as serious a matter as thyroidectomy. Dressman states that improvement is slower after ligature of vessels than after operative treatment on the gland.

d. Exothyropexy for exophthalmic goiter has been performed with varying results. In one case[42] recovery from the operation and from the disease occurred. This operation has been termed "unfinished partial thyroidectomy." Poncet (Lyons) reports cases of exophthalmic goiter treated by exothyropexy which are not included in our bibliography. Mikulicz was of the opinion that ligature was more difficult, more dangerous and less efficacious than resection of the struma.

Ligation of the vessels and partial thyroidectomy was performed in one or in several sittings in nine cases.[38] There were no deaths and all the cases recovered either partially or completely from the disease.

Total thyroidectomy was performed for this affection thirteen times.[39] One case[39h] died of pneumonia; the left recurrent laryngeal nerve having been included in a ligature. All the other cases recovered, either markedly or completely, from the disease. In a certain case[39f] myxedema developed. Upon the ingestion of thyroid extract, all symptoms of thyroid insufficiency disappeared. One case[39e] was a sarcoma of the thyroid. This patient died after a time from general sarcomatosis. He had recovered from his exophthalmic goiter. In the absence of accessory or aberrant thyroid bodies, total thyroidectomy is very liable to be followed by cachexia strumapriva. This explains why the operation is no longer performed by those that know. Postoperative myxedema can always be controlled by the administration of thyroid extract.

Partial thyroidectomy was performed in over 40 cases of the secondary form of exophthalmic goiter. There was not a single operative death in this series. In all the cases but one, there was either marked or complete improvement.[40] One case[40cc] died several months later from exhaustion consequent on an empyema.

Partial thyroidectomy was performed in over 162 cases of primary exophthalmic goiter. There were eleven deaths in this series. All the other cases made either moderate, marked or complete recoveries. Of the eleven deaths, one[40u] occurred on the operating table; one[40cc] as a result of very free operative hemorrhage; four[41] from acute thyroidism; two[42] from acute influenza; the former two months after the operation, the latter ten days after. In the other cases the cause of death is not stated with sufficient detail. In one case[40a] a tracheotomy had been performed three weeks before the operation.

Partial thyroidectomy is as yet the most satisfactory operation for performance in all cases of exophthalmic goiter, be they primary or

secondary in type. In cases that survive the operation it is invariably attended by marked alleviation of symptoms, in many instances by complete and permanent cure. Kocher is of the opinion that partial resection and ligature of the vessels is the most rational procedure. He first ligates the two superior thyroid arteries. This, in his opinion, is easy of execution and makes the subsequent work easier. He then ligates one inferior thyroid artery before extirpating the gland. No more thyroid tissue need be left *in situ* than is present in the normal organism, that is, from 30 to 60 grams. The surgeons that have, for the cure of this disease, removed the largest quantity of thyroid tissue short of its entirety are those that have obtained the very best results, both from the standpoint of the number of recoveries as well as from the standpoint of completeness and of permanency of recoveries. If not enough gland tissue is removed, the maximal benefits are not derived from the operation, as in Ehrich's[11] and other cases. Friedheim (Hamburg) is of the opinion that in the cases in which only an improvement has been noted there is still too much gland left behind. A small amount of glandular tissue is all that is required to maintain the ordinary nutrition of the body. If too much is removed, thyroid insufficiency may develop.[38f] When the thyroid gland is not totally removed the possibility of postoperative myxedema may be said not to exist. Kocher met it only once in 1,000 operations for goiter. In this case he removed half the gland, the remaining half atrophied. The symptoms disappeared following the administration of thyroid extract.

7. The secondary forms of exophthalmic goiter, when subjected to partial thyroidectomy, almost invariably recover from the operation and from the disease.

8. Operators disagree as to the most suitable anesthesia for these cases. All the anesthetic agents have their partisans. Fatalities have occurred with all of them. General anesthetics have the disadvantage of increasing the cardiac insufficiency and of frequently being followed by cough which may induce secondary hemorrhage, by vomiting which may soil and infect the dressings on the wound. Kocher recommends local anesthesia; he never operates singers, for goiter, under general anesthesia; the Mayos (Rochester, Minn.) employ general ether anesthesia in almost all their cases. They are very partial to the use of ether as a general anesthetic in these cases. Kummell uses oxygen-chloroform. Kurt, Schultze and Riedel have seen an acute bronchitis follow operations for exophthalmic goiter in which only local anesthesia had been employed. According to Professor Fenger, the degeneration of the heart muscle will account for some of the sudden operative deaths, while the absorption of thyroid, shock, anemia and general nerve exhaustion will account for most of the other deaths that are not due to the anesthetic. One of the most potent causes of death after operation is a weakened heart muscle. Kocher, as a result of his enormous experience, believes that we can say that partial thyroidectomy can be performed without danger

provided the heart is sound, careful hemostasis obtained and the wound is drained. Drainage is essential.

9. The dangers of partial thyroidectomy in exophthalmic goiter are either avoidable, such as infection and hemorrhage, or unavoidable, such as "acute thyroidism." This latter, also called "thyroid fever," is liable to occur after the observance of all precautions now known to us. We do not yet know how to prevent nor how to cure "acute thyroidism." It is not always fatal. Free drainage of the operative wound is our most serviceable weapon for combatting this complication. Also valuable in this respect is the careful handling of the stump and of the thyroid gland at time of operation. The nature of the anesthetic and that of the operation seem to have little influence in its production. "In operations on these cases (exophthalmic goiter) there are certain inherent dangers that no amount of cleverness can avert" (Mayo).[32] All Basedow's patients seem very sensitive to surgical operations. In the cases of postoperative "acute thyroidism" that have proved fatal, there was a sudden rise of temperature to 105-106 F., a very rapid pulse, extreme excitability and restlessness with great anxiety and distress, profuse sweating and, finally, collapse and death from heart failure. The most reasonable explanation for this series of symptoms is a sudden poisoning of the entire system by an excessive absorption of thyroid juice suddenly produced during the operation. Avoid crushing of thyroid body and escape of its secretion in operative wound.

10. There is no doubt that the mortality is greater in bad cases than when the symptoms are slighter and the patient in better condition. Early operations give the best results. They give a lower percentage of deaths and a very much higher percentage of cures. Exophthalmic goiter tends to diminish vital resistance and to exhaust the nerve centers; hence operate before the patient's vitality has been lowered by chronic thyroid intoxication. Kocher lays great stress on the avoidance of the development in all cases of goiter of what he called the "thyroid heart." This, he aserts, can be acquired either by waiting too long for surgical intervention or by excessive iodin or thyroid extract therapy. He assures us that the prognosis in Basedow's disease will be much better in the future if the operation is done early. In Schultze's cases[21] all deaths but one occurred in patients in whom the cardiac conditions were bad. The condition of the cardiovascular system is in this affection an important element in determining the outlook of the case. This is one of the reasons why the vessels should be well secured and the nurses in attendance instructed to watch for evidences of secondary hemorrhage. In very severe cases, successive operations at different sittings can be done with benefit to the patient. This is well exemplified in some of Kocher's cases.[37]

11. Operative points:

a. It is well to prepare patients for some time, to observe them and to better estimate their ability to withstand operation. Before operation all cases should be examined with the laryngeal mirror to determine whether one or both laryngeal nerves are compressed by the thyroid

growth. The most rigid aseptic precautions must be observed to avoid infections: mediastinitis, deep phlegmon of the neck, thrombophlebitis, septicemia, etc.

b. Use the inverted Trendelenburg position. Put the neck in that position which makes the goiter most accessible and which interferes least with respiration. A hard round pillow is put under the neck.

c. Kocher's transverse convex incision allows of a complete exposure of both lobes. From an ultimate cosmetic standpoint, it is the best, as the usual neckwear will hide the scar. If it is necessary to make a section of the sternohyoid and the sternothyroid, the Mayos advise that this be high, so as to preserve the nerve supply to these structures. After extirpation of the tumor, divided muscles should be sutured. The saving of the posterior capsule protects, in the opinion of the Mayos, against many of the dangers of partial thyroidectomy. The saving of the posterior capsule, among other things, lessens very much the liability to total parathyroidectomy. According to Segale (*Achivio per le Scienze Mediche,* Turin, 1907), after parathyroidectomy, such profound disturbance of the metabolism occurs that all efforts on the part of the organism to repair are absolutely ineffectual. After completion of operation, the cutaneous wound must be sutured accurately. Drain through an opening made below this wound.

d. Hemostasis must be perfect. Do not depend on temporary compression to arrest the bleeding. It is deceptive. When possible tie the blood vessels. It is preferable to leaving clamps in position. Clamps interfere with healing of the wound.

12. Recovery from all the symptoms is neither immediate nor simultaneous. The first symptom to subside is the tachycardia. The tremor and the nervous and psychical symptoms also disappear quickly. The total disappearance of menstrual disturbances is of good prognostic omen. It takes months for the entire beneficence of the operation to become manifest. In many cases the improvement is slow in becoming apparent; for instance, in one case,[11] slight, if any, improvement was present at the expiration of nine months. The betterment began and gradually increased so that at the end of four years it was complete. The exophthalmos is the last symptom to disappear. Albert Kocher says that a total disappearance of exophthalmos can only be expected in those cases in which the operation is performed early. Eye symptoms disappear in the majority of cases, quickly and completely, irrespective of persistence or disappearance of exophthalmos. The longer the period of observation after the operation the better appear the results.

13. When after a partial thyroidectomy the symptoms recur, the recurrence is most frequently associated with a hypertrophy of the remaining portion of the gland.[44] Removal of a portion of this will bring about a cure.[44] In one case,[44c] after a second operation, symptoms of tetany appeared, but disappeared completely after ingestion of thyroid extract.

14. Partial thyroidectomy is indicated:

a. In all cases of secondary exophthalmic goiter.

b. In all cases of primary exophthalmic goiter:

(*a*) When after three months of well-conducted, appropriate medical treatment the patient's condition is not markedly improved.

(*b*) When the goiter compresses or distorts the trachea, or the esophagus, or both,[45] as long-continued dyspnea is very liable to beget pulmonary emphysema.

(*c*) When tachycardia is marked;[47] long-continued and excessive tachycardia is very liable to beget organic heart changes.

(*d*) When exophthalmos is so marked as to prevent complete closure of the lids during sleep.[46] Kocher and others report cases where patients lost their eyesight through ulceration of the cornea secondary to marked exophthalmos.

(*e*) If the patient is losing strength.

(*f*) In all acute cases that seem like a sudden intoxication of the body by thyroid, even when no marked enlargement of the thyroid body can be demonstrated (Rehn, Nonne, von Eiselsberg).

15. Surgical treatment of exophthalmic goiter is justified by theory and by facts.

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FEBRUARY, 1908.

THE CHARITABLE INSTITUTIONS OF ILLINOIS.

In some respects it was a fortunate accident that resulted in the serious burning of a feeble-minded child from Chicago on an unprotected radiator at the Asylum for Feeble-minded at Lincoln. It has served to bring public attention to this and other institutions for the care of the mentally defective and mentally diseased which, for, lo! these many years, have been so conducted as to be a disgrace to the state. A reorganization of the whole system from top to bottom is necessary, and we hope public interest will be so aroused by recent developments that it can no longer be delayed.

We approach the discussion of this subject with the greatest hesitation, for it is, in the first place, a large and growing proposition. Again, our motives may be impugned and, even though we may write with the very best intention and with possibly a little more knowledge on some phases of the subject than many a one not intimately connected with this sort of work, still our view may not be comprehensive enough to do the subject justice. Again, events are moving so rapidly that what is said to-day may appear from later developments not quite apropos when printed some days afterward. We shall confine our remarks this month almost entirely to the Lincoln institution.

The charitable work of this state began in 1839, twenty-one years after the admission of the state, when the School for the Deaf was created and located in Jacksonville. In 1847 what is now known as the Central

Hospital for the Insane was created and also located in Jacksonville, and two years later the School for the Blind was also located in the same city. Early in the history of the School for the Deaf, mentally defective children were presented for care and instruction, and finally these became so numerous that some provision had to be made for them by Superintendent Gillet and the generous citizens of Jacksonville, and for some time before the legislature erected a separate institution they had been taken care of at the School for the Deaf in this manner. Finally, in 1865, the fourth state institution, that for the feeble-minded, was created and located in the former residence of Governor Duncan. The trustees of the School for the Deaf, among them Dr. Robert Boal of Peoria, were made responsible for the new institution. Soon Dr. C. T. Wilbur of Massachusetts, a brother of Dr. Harvey M. Wilbur, a pioneer worker in this field, was placed at the head of the school and it grew rapidly. About 1875 the General Assembly appropriated a considerable sum for the erection of a large building, but with a vicious provision that the institution should be sold to the community offering the largest price. The law did not read that way, but that was its effect, and for this reason Jacksonville, the city particularly fitted for it; that had voluntarily contributed so much for it, and the logical situation for the new institution, was rejected; and Lincoln, then a community of about 5,000 souls, was chosen. The building was finally finished and the children transferred in 1877. At that time the "Institute," as it is locally known, was the big thing in the town, and it remains to this day the most talked-about entity in the Logan County capital. Here is where the troubles of the asylum began, and they have never ceased from that day to this. Superintendent Wilbur was a typical Yankee, sharp and close in a bargain, and in many ways a valuable officer for the State, and the asylum was conducted in the most economical manner. Dr. Wilbur was also interested in his work and undoubtedly conducted a high-grade institution. His wife, Mrs. Leila Burgess Wilbur, was a human angel and worked night and day for the welfare of the unfortunate inmates. The writer, a medical student in 1877, resided in the institution for three months, worked hard, received no pay, and finally, deciding that he did not care to undertake that sort of a specialty, left to attend a medical school.

This experience enabled him to appreciate something of the work of the institution.

It was then possible to make some selection of the applicants and conditions were much better than they afterward became. Notwithstanding the excellence of the work at the institution, Wilbur soon fell into disfavor among the citizens, and more especially the politicians, and was displaced by an unfriendly board and a Dr. Fish installed. Fish was probably much inferior to Wilbur, but the latter unfortunately took his dismissal greatly to heart and rushed into print and exposed his own weakness, while he probably told a great deal of truth about the cause of his dismissal.

From that day, 1883, to this, we have frequently heard some one abuse the institution. Politics soon gained complete control and the asylum became the dumping ground for all sorts of mentally defective children, some of the children being above 40 years of age. Epileptics are there by the score, by what right God only knows, for the real intent and purpose of such an institution is supposed to be not custodial, but to educate and train the mentally weak. The last report available shows that of the 1,400 inmates only about 800 were capable of receiving the mental or manual training designed to be taught at such an institution. There were nearly 400 epileptics and there were several hundred low-grade imbeciles wholly custodial.

Dr. Fish remained in charge of the asylum from 1883 to 1892, when Governor Altgeld began his raid on the state charitable institutions and brought them to a level so low that they have never recovered their former position. The state institutions were then made the political asset of the dominant party, and most of them are still so considered. After two disastrous years Dr. Miller was forced to resign, and Dr. J. Whitefield Smith, now of Bloomington, took charge. Dr. Smith struggled faithfully to bring order out of the existing chaos and might have succeeded, but in 1896 another change in administration occurred and Dr. W. L. Athon succeeded him. From bad to worse, from worse to worst, were the administrations of Dr. Athon, Dr. S. H. McLean, who died while superintendent, and Dr. C. B. Taylor, who occupied the position by appointment of Governor Yates on the recommendation of John G. Oglesby, member of the lower house from the Macon-Logan district.

The daily press has given, in full detail, accounts of the management of the institution in the past years, so that we need not take the space for them here. This was the condition when the present State Board of Charities was appointed. A faithful effort, we believe, was made to secure a man especially trained for the place and strong enough to withstand the fearful local conditions. This was found impossible. The reputation of Illinois has gone abroad in the land, and no self-respecting scientific worker could be found to leave a state where honest effort is appreciated to come where legislative committees and members represent the superstitions and errors of the dark ages, where such a distinguished and unselfish citizen as Rabbi Hirsch must be insulted when he appears before a legislative committee to plead for modern methods of treating the sick.

It was as a last resort and in the hope of beginning a better order of things that Dr. H. G. Hardt was selected for the position of superintendent in 1907. It is no discredit to Dr. Hardt to say that he came to the enormous task, young in years and without special experience among the feeble-minded. He valiantly plunged into the work, facing disloyalty among his employés and deprived of the confidence and help of one of his trustees. The Governor and the Board of Charities have stood at his back. He has done much in the direction of establishing modern methods in the institution, but has been forced, because of the decrepit, mechanical equipment, to devote much of his time to the business side

of the place. It can not be said that he is the best man for the place, but we can endorse the declaration of the Board of Charities "that he should perfect the organization of the medical, nursing and attendant staffs for the purpose of securing recognized individual responsibility as well as efficiency" and "that he is embarrassed by many conditions which can not be made satisfactory by him, except by a longer period of service."

Perhaps an attempt will be made to make Dr. Hardt the scapegoat of the present crises. We feel, judging from our present light, that the defects of the man should be overlooked for the present in view of his courage and what he has done. Now that the atmosphere has been cleared away by the storm, a longer period of service would enable us to determine whether he can overcome the many conditions which embarass him.

PROPRIETARY PREPARATIONS AND THE USE OF PHOTOGRAPHS IN THE ADVERTISEMENT OF THE SAME.

A suit of considerable interest has been before the United States Court for the past two years. The parties involved are Duffy's Malt Whiskey Company of Rochester, N. Y., *The Tribune* Company of Chicago, Ill., and Mrs. Elizabeth Peck of Mt. Auburn, Iowa, formerly of Englewood, a suburb or part of the city of Chicago.

It seems that in October, 1905, the Duffy Malt Whiskey Company inserted an advertisement in the *Chicago Tribune,* using the photograph of Mrs. Elizabeth Peck and her son, Mark Peck, as the photograph of a Mrs. A. Schuman. In the advertisement this Mrs. A. Schuman, whose occupation was a nurse and whose residence was 1576 Mozart St., Chicago, is quoted as having stated that:

"After years of constant use of your Pure Malt Whiskey, both by myself and as given to patients in my capacity as nurse, I have no hesitation in recommending it as the very best tonic and stimulant for all weak and run-down conditions. At least twenty-five families use it in my own neighborhood, and when I go out nursing patients ask me what to take for that 'gone feeling,' and once that Duffy's is within their reach it is used always."

Mrs. Peck, on seeing the advertisement, at once recognized the photograph to be that of herself and her son, and this being true it could not be the photograph of Mrs. Schuman as it purported. Mrs. Peck not being a nurse nor a consumer of Duffy's nor any other whiskey, took exception to the use of her photograph in a whiskey advertisement and brought this matter to trial, claiming damages of *The Tribune* on the ground that the picture was published without her knowledge or consent and for invasion of her right of privacy, averring that in the printing of this advertisement she had been greatly disgraced and humiliated. The *Chicago Tribune,* being the defendant in the case, claims exemption from the damages on the ground that it had no knowledge at the time of its publication that the portrait printed was not the portrait of the plaintiff in error, or was other than the portrait of Mrs. Schuman.

Judge Peter S. Grosscup, after stating the facts at the January session, A. D., 1907, of the United States Circuit Court of Appeals, Seventh District, delivered the following opinion:

"The plaintiff in error indisputably has suffered a wrong, the gist of which is that by the publication of her picture in connection with a patent-medicine advertisement people who recognize the portrait will be led to think that she has loaned her face, and perhaps her name, in a way that a self-respecting person would not have consented to. Were the case under review an application for an injunction to restrain future publications, or were it an action at law against the parties consciously responsible for the make-up of the advertisement, a question wholly different from the one presented by the record would be involved.

"The first question presented here is whether the plaintiff in error made out a case of libel in her declaration and proof—the gravamen of the action, as set forth in the declaration, being that whereas plaintiff in error was not a nurse, and did not either for herself or as a nurse, use Duffy's Malt Whiskey as a tonic, the advertisement was calculated to convey the impression that she was a nurse and that both for herself and as nurse she had used Duffy's Malt Whiskey as a tonic. This being the whole of the libel charged, and there being no averment of special damages, the question is: Is such a publication libelous, *per se*? We think not. It is not, in our opinion, libelous, *per se*, to say of a person that she is a nurse, or that she has used as a tonic Duffy's Pure Malt Whiskey, or has recommended its use. Nor do we think that these things said of a person, independently of other averments or circumstances, make out a case to go to a jury for determination. Doubtless there are people by whom the use of whiskey as a tonic is considered wrong; and there may be people among whom to be a nurse is considered something less desirable than not to be a nurse. But the world has not yet arrived at a consensus of opinion on these matters, that to say these things of a person is, independently of all other considerations, to libel him.

"This brings us to the other count—that the publication of the advertisement is an invasion of plaintiff in error's right of privacy. The difficulty with this count, and with the proof in support of it, is that defendant in error stood in relation to the advertisement as printer and distributor only, acting without knowledge that the face printed and distributed was that of plaintiff in error, or was not that of the person whose face it purported to be; and as printer and distributor of matter offered as advertising matter, there cannot be indulged that presumption of malice that might possibly be indulged if the matter were printed as a part of the newspaper's collection of news: Now where there is no malice, and no technical trespass to reality or personality, or other case involving the adjudication of title, or some other substantial right, which it was important to the plaintiff to establish, the maxim *de minimis non curat lex* is in some states applied, and recovery for nominal damages not allowed.

"But we need not put an affirmance of the judgment below upon this ground. There was no request made in the court for the allowance of

nominal damages. There is no assignment of error that nominal damages were not allowed, so that there may be applied, we think, the doctrine prevailing in Indiana, New York and other states (no Illinois case or cases from the United States Supreme Court having been brought to our attention) that a judgment under such circumstances will not be reversed for failure alone to give nominal damages. Rhine, Admr. v. Morris, 96 Ind. 81; Platter v. The City of Seymour, 86 Ind. 323; Funk v. *The Evening Post* Publishing Co., 76 Hun. (N. Y.) 497.

"The judgment of the Circuit Court is affirmed."

The attorneys for Mrs. Peck have taken exception to Judge Grosscup's opinion. The matter is now before the Supreme Court of the United States and the attorneys of Mrs. Peck will claim that the court, as voiced by Judge Grosscup, treated the case with contempt and handed down an opinion that is utterly inconsistent and irreconcilable with itself. Its opening paragraph declared that by the publication the plaintiff suffered wrong, but further on holds the article not libelous. In short, as they claim in their brief, the opinion is an attempt to rewrite the law of libel. The right of privacy is utterly ignored.

The whole transaction goes to show to what remarkable lengths advertisers of nostrums will go to exploit their wares and to what extent the daily papers will lay themselves liable for the disgraceful and untruthful advertising they are called upon to put before the public. We hope that *The Tribune,* from this experience, will still further extend its rules and in the future refuse admission to its columns of all proprietary medicines and preparations.

PUBLIC COMFORT HOUSES NECESSARY.

The Master Plumbers' Association of Illinois, at their recent meeting in Springfield, unanimously voted to recommend the passage of a law requiring each town and village in the State to fit up public toilet rooms. In a large number of towns, saloons have been voted out, and no public toilet rooms have been provided to take the place of those in saloons formerly used as such. While there may have been a large amount of self-interest influencing the plumbers to pass this resolution, it is nevertheless true that their action calls attention to an urgent need in all American communities. As it now it, public streets and alleys are used, greatly to the discomfort of the suffering public and greatly to the disgust of the adjacent property owners and occupants. Chicago and other large cities in the State might well be included in the law, since none of them have furnished adequate facilities for the public.

We, therefore, take occasion to second the movement of the plumbers on sanitary grounds and hope that such a law will be speedily enacted in this State.

A BUSINESS BUREAU FOR THE CHICAGO MEDICAL SOCIETY.

For about two years a committee on a business bureau for the Chicago Medical Society has been laboring to find particular methods whereby the establishment of such a bureau might become a fact. As a result of a report of this committee in October, the council voted to recommend to the board of trustees that the sum of $1,000 be appropriated for the establishment of such a bureau. At a subsequent meeting of the board of trustees this recommendation was concurred in, and the business bureau became a fact and opened its office in the Northwestern University Building, Lake and Dearborn Streets, Chicago. It is the purpose of this bureau to immediately accept physicians' accounts for collection and charge for the same a collection rate not to exceed that charged by regular collectors, and as the business develops it is hoped that the rate of commission charged may be reduced.

This venture is no doubt one which carries with it great possibilities for the business management of a large county society such as the Chicago Medical Society. A central office, from which practically all the business of the society may be dispatched, is no longer an insurmountable ideal condition. The establishment of this business bureau is the first step toward the opening of a central office from which all of the business connected with the Chicago Medical Society can be transacted; it looks toward a final consolidation into one office for the purpose of conducting all detail and clerical work belonging to the offices of President, Secretary and Treasurer. Economic business efforts are a necessity in the management of a large medical organization as in commercial enterprises, differing only in that the latter is conducted largely for gain, while the former is conducted with a view to promoting the best interests of the medical profession and the public, with the greatest saving in the expense account. We congratulate the Chicago Medical Society upon this forward step and believe this venture will meet with the greatest of ultimate success.

THE COCAIN BILL BECOMES A LAW.

The bill regulating the sale of cocain, eucain and all similar drugs passed by the present session of the Illinois Legislature was presented to Governor Deneen, January 17, and was signed by him. Before signing the bill, Governor Deneen took the precaution to have it passed upon by the Attorney General, and it is hoped that the bill is so phrased that it will withstand the assaults of its enemies and that the heavy penalty provided for violation will result in a marked diminution of the sale of this disastrous composition. Its passage was approved by the better class of druggists and medical practitioners throughout the state. The people of the state are to be congratulated that the much-needed law will now go upon the statute books.

FORTUNE TELLERS DRIVEN OUT OF TWO CITIES.

The city council of Chicago and Danville have recently enacted ordinances designed to put fortune tellers, palmists and all allied swindlers out of business. It is quite remarkable that at this day and age of the world these people find so many dupes in a community supplied with such a well-educated population as the state of Illinois. A great many of these people have done quite a business in the practice of medicine under the guise of clairvoyancy.

The *Chicago Tribune,* in discussing this subject, acknowledges that in making the attempt to drive out of business the alleged seers, prophets, seventh sons of the seventh son, and other imposters who thrive upon the superstition of the community, the council is undertaking a big job. These frauds have been doing business too long to be rooted out in a day. They have customers in all classes of society. The particular charge which will have more to do with ridding the community of them than anything else is their robbery of all who have dealings with them. Probably the most effective provision of the Chicago ordinance is that which prevents the advertisement of these people.

The corporative council of Chicago was taxed to draw up a wording sufficiently broad to cover all classes, and the following sentence designating the offenders is supposed to cover the ground:

"People who hold themselves out as able to foretell the future, discover lost property, etc., by occult or psychic powers, faculties, or forces, clairvoyance, psychology, psychometry, spirits, mediumship, seership, prophecy, astrology, palmistry, necromacy, or like crafty sciences, cards, talismans, charms, potions, magnetism, oriental mysteries, or magic of any description."

CITIES AND VILLAGES AUTHORIZED TO ESTABLISH AND MAINTAIN SANITARIUMS FOR THE TREATMENT OF TUBERCULOSIS.

A bill has been passed by the General Assembly authorizing cities and boards of trustees of villages to levy a tax not to exceed four mills on the dollar annually on all taxable property for the purpose of establishing and maintaining sanitaria for the treatment and care of persons afflicted with tuberculosis, residents of such cities or villages. Three directors shall be appointed by the Mayor or President, one of whom shall be a representative of the local board of health, and the other two with reference to their special fitness for the office. If signed by the Governor we shall watch the enforcement of this law with a great deal of interest.

NOTICE TO MEMBERS.

Any member desiring to present a paper at the next annual meeting of the Illinois State Medical Society, to be held in Peoria May 19 to 21, must communicate immediately with either Dr. George Edwin Baxter, 1916 Evanston avenue, Chicago, Secretary of Section 1 (Medicine), or Dr. W. B. Helm, Rockford, Ill., Secretary of Section 2 (Surgery). The program is being rapidly filled.

Correspondence.

HOTEL ACCOMMODATIONS FOR NEXT STATE MEETING.

PEORIA, ILL., Jan. 22, 1908.

EDITOR ILLINOIS MEDICAL JOURNAL,
Springfield, Ill.

Dear Doctor:—It has been suggested that, inasmuch as the state meeting of the Order of Elks will be held in this city on dates essentially concurrent with those of the forthcoming meeting of the State Medical Society, it would be well to notify the members of the latter who desire a choice in the matter of accommodations that they may make their reservations at as early a day as practicable.

While the local committee feels that there is no danger of any one in attendance being seriously discommoded in this respect, the foregoing information is given, together with that set forth in connection with the appended list of the principal hotels here. Aside from those mentioned below there are numerous smaller hostelries to which the undersigned will be glad to direct any one who desires. In fact, the city is preparing to entertain the 50,000 Modern Woodmen who meet here in national convention in June next, and will be pleased to give every attention and comfortable accommodation to such organizations as our own as a sort of enlivening prelude to the greater task.

The following is the list above referred to:

The National Hotel (headquarters). Capacity 450. Two persons required to a room. American plan. Rates, $2.50 to $4.00 per day.

The Hotel Mayer. Capacity 350. European plan. All outside rooms. One dollar per day and up.

Hotel Fey. Capacity 250. American plan. Rates, $2.50 to $4.00 per day.

Niagara Hotel. Capacity 220. European plan. Rooms $1.00 per day and up.

Hotel Smith. Capacity 150. American plan. Rates, $2.00 to $3.00 per day.

Hotel Majestic. Capacity 100. European plan. Rooms $1.00 per day and up.

Sincerely,

O. B. WILL, Committee on Hotels.

Special Article.

EARLY MEDICAL ORGANIZATION IN ILLINOIS AND THE ROCK RIVER MEDICAL SOCIETY.*

WM. O. ENSIGN, M.D.

RUTLAND, ILL.

An item, by no means uninteresting to the medical profession of Illinois, should be the fact that at Rockford was organized one of the first, if not the first, vigorous medical association within the state—The Rock River Medical Society. Here, on March 4, 1846, was issued a call to the physicians of the locality to meet two weeks later, such date being the 17th day of the same month, for the purpose of forming an organization. Here, on the last date named, was instituted a medical society with a territory comprising the entire northern part of the State of Illinois, together with the southern portion of the then Territory of Wisconsin. Here again two months subsequently, or on the 19th day of the following May (it being the third Tuesday of that month) was held in the courthouse at Rockford the first annual meeting of such organization, of which Dr. Josiah C. Goodhue had been made the first permanent president and Dr. Samuel G. Armor its secretary, both of that city. With this meeting the roll of membership had reached a total of 28 individuals, of whom 26 were physicians and 2 of the whole number were apothecaries. The conditions of admission were no less liberal than those we now consider full and free enough to embrace all schools of scientific medicine. Here gathered from their often widely scattered and extended fields of practice many of the first and foremost of their profession. Here, too, came the eminent Dr. Daniel Brainerd from Chicago, by means of his own private conveyance, to attend upon this meeting, to subscribe his name to the conditions of membership and to become allied with this undoubtedly first substantial medical society of northern Illinois.

During its few years of brief but active existence there affiliated with its membership many more of the brightest and most capable practitioners of medicine, from Freeport on the west to Geneva and Chicago on the east, and from Janesville, Wis., on the north nearly to Peoria, Ill., on the south. On the occasion of its first annual meeting, its president, Dr. Goodhue, "one of the earliest practitioners in the northern part of the state," delivered an address on "The Past and Present History of the Medical Profession in the West." Of this discourse, Dr. Brainerd has left assurances that it abounded in items of much historical interest to the profession. Of the society's pioneer character, he has likewise given testimony that it was "the first medical society organized upon so extended a scale in this region," while of the meeting as a whole he said, "We were present and were highly gratified with the zeal and unanimity exhibited and the numerous attendance." This eminent surgeon like-

* Read at the Fifty-seventh Annual Meeting of the Illinois State Medical Society at Rockford, Wednesday evening, May 22, 1907.

wise delivered an address on "The Improvements in Surgery," and this before both the profession and the public in the evening of the same day, which the local press pronounced, as might have been expected from its author, both "instructive and able." A member of the profession then present, in writing to a medical friend more than 40 years later, said of the same address, "It was eloquent, of course, for it was Brainerd."

It may be true, as has been sometimes intimated, that a few other medical societies had been formed throughout the state at an equally early, or even prior, date to that at Rockford, yet most of such had a far too brief and uncertain existence to now entitle them to more than a passing mention of the fact. There had been a society located at Springfield as early, at least, as 1840, of which but a single notice is within our knowledge. Morgan County possessed a county organization in 1846, but it must have soon faded out of sight. A proposed district society was formed at Ottawa in 1847, however, of brief duration. It was closely followed, in turn, by other medical organizations in the same county down to the present large and active La Salle County Medical Society. A society was also reported in Peoria County as early as 1847, yet the present influential medical organization of Peoria dates its own origin and uninterrupted continuance only from 1848.

The single medical society which might be justly said to have come, in any way, into competition with the Rock River society, as to priority of organization and effective work, is the vigorous Æsculapian Society of the Wabash Valley, which was instituted at Lawrenceville, about 275 miles south and east of Rockford, during the same year, and which has long since demonstrated its right to the honor of being the oldest continuously existing medical society in Illinois. The exact day and month of its organization may be possibly in doubt, but the society was incorporated about a year later by a special act of the state legislature, and it is doubtless the first and only medical society within the state to have been so incorporated by a special enactment in its own behalf. This society eventually comprised territory likewise outside of the state, since a portion of the State of Indiana was subsequently included within its sphere of influence. Until 1854 it appears to have had a somewhat precarious existence, although continuing to maintain its original organization from the first, in which named year it entered upon a new and more vigorous life and energy, which has brought it forward to be, a half century later, one of the largest local medical societies within this commonwealth. Incidental allusions to other very early societies have been occasionally met with, but of which no notes or records and often no names seem to have remained to prove or disprove their actual existence.

Of the Rock River society, it might be stated that, while a vital organization, it was active and vigorous. It held numerous meetings, generally semi-annually, alternately at Janesville and Beloit, in Wisconsin, and Rockton, Rockford, Roscoe, Belvidere and Dixon, in Illinois. Of its membership, Dr. Alfred E. Ames, of Roscoe, was the first person to matriculate at Rush Medical College, and his name is to be found on the

first roll of membership of the Illinois State Medical Society, standing alphabetically at its head. Subsequently he became one of the founders of the now great and flourishing city of Minneapolis, Minn. Dr. Samuel G. Armor, of Rockford, the society's first permanent secretary and apparently one of its prime moving spirits in its early development, later came to be an able teacher and popular professor in one or more medical institutions of our land. Dr. R. S. Maloney, of Belvidere, was at one time a member of the National House of Representatives. Dr. Ephraim Ingals, then of Lee Center, later of Chicago, became an honored professor in Rush Medical College, also an intimate friend of Dr. Brainerd, later by request administering upon the estate of his friend on the latter's decease. Not many years since it was our privilege, standing with him beside the grave of Dr. Brainerd, to receive from Dr. Ingal's own lips a brief but interesting and touching account of their mutual esteem and friendship for each other, while the former was yet living and they were associated in the same medical faculty; likewise of his own profound grief and sore distress of spirit at the untimely death, by cholera, of his intimate co-laborer and beloved friend. There were, no doubt, many others among the membership of the Rock River Medical Society who were, at some time in their several careers, eminently distinguished in their profession or otherwise, but our own limited resources of information are too disconnected and scattered to enable us to point out, at this time, the possible facts that may exist in relation thereto. It might be here remarked that the names of Clark, Catlin and Ransom, at least, are still to be found among those of the present local profession, though doubtless of another generation than that to which their honored namesakes belonged. However, we may feel confident that those still bearing such names can be none the less interested, by reason of such fact, in their predecessor's professional relations and commendable achievements.

This pioneer society appears to have subsided about 1850 or 1851, at which time it was succeeded by the Winnebago County Medical Society, of which Dr. William Lyman, of Rockford, was undoubtedly the first permanent president, as he was later, also, the first vice-president of the state society, in 1858. Many of the members of the Rock River society subsequently became members of the state society and of these Dr. Ephraim Ingals was president in 1880. At the last meeting of the early society of which we possess any notes, held at Rockton on Oct. 16, 1849, Dr. A. M. Catlin, of Rockford, presided and delivered a presidential address on "Mental Discipline and Its Relation to the Healing Art," which so captivated his fellows that it was published by vote of the society, and we are informed that one or more copies are still in existence. It is to be feared, however, that as much can not be said for the preservation of the address of Dr. Goodhue, before mentioned, which was prepared by one of the oldest physicians of the locality and, as already stated, abounded in items of historical interest to the profession. If not preserved, its loss is to be deplored, since it might have possibly formed an interesting connecting link in the early history of the medical profession of the northern portion of this state. The last meeting mentioned as

having been held at Rockton was further notable from the fact that it selected seven delegates to attend the convention proposed to be held at Springfield the following year for the purpose of constituting a state medical society for Illinois. The delegates then named were as follows: Drs. R. S. Maloney, Belvidere; A. E. Ames, Roscoe; C. Martyn, Freeport; W. W. Welch, Inlet Grove; Oliver Everett, Dixon; U. P. Golliday, Kickapootown, and A. M. Catlin, Rockford. Medical history heretofore recorded in the transactions of the state society (1895, page 59) shows that not one of the number were ever in attendance upon the convention when held, doubtless owing, in a great measure, to the long distance to be traveled and the slow and limited means of public conveyance then available. However, Dr. S. Allen Paddock, of Princeton, likewise a member of the society, was present and ably represented that body, himself being chosen one of the first two permanent secretaries of the state organization.

This local medical society subsided about the period of the formation of the state society, but this may haye occurred, in part, only as a coincidence. It is but fair to suppose, however, that the cutting off of a large portion of its territory by the admission into the National Union, in 1848, of Wisconsin as a state, and the probable formation of local societies within such separated territory, as well as the tendency to the more frequent development of county organizations within our own state, as the population increased, as well as the institution of a state medical society, might have had no little influence also in the final substitution of a Winnebago County medical society for the earlier organization.

In taking leave of this subject, let us be reminded that the early incidents herein recorded relative to the organization of the Rock River Medical Society took place in the city of Rockford, wherein we are now assembled, more than three score years ago, and that the address of Dr. Brainerd, already referred to, was delivered before the early society and the public on the third Tuesday in May, full 61 years prior to the opening exercises of the Illinois State Medical Society's fifty-seventh annual meeting in the same city on last evening.

Let it be further noted that, at the date of this early society's organization, anesthetics had not yet come into general use; that it was not until a year later that Sir James Y. Simpson brought out chloroform as a competitor with sulphuric ether in obtunding the pain of surgical operations; that it was still another year or more later before the first operation under chloroform anesthesia had been performed in the U. S. Army, on which occasion it may here be also related a late member of the Illinois State Medical Society was then present in the capacity of a U. S. hospital steward at Vera Cruz, Mexico, the patient being a soldier, likewise from Illinois; that the hemostatic clamp forceps of Pean or any of its numerous or varied modifications had not yet been invented, and that Sir Joseph Lister's antiseptic methods for aseptic surgery were undeveloped until a score or more of years later.

Nor should it be forgotten that the date of the first meeting of this early society at Rockford was a full year before the American Medical

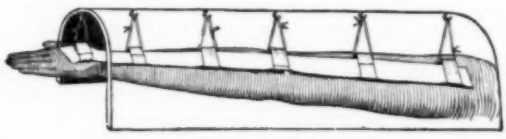
Association was organized, and could have been but little, if any, length of time subsequent to a period when the number of surgeons, eminent in their profession and residing west of the Allegheny Mountains, could have been almost counted upon the digits of a single hand, as Horace A. Ackley, of Cleveland, Daniel Brainerd of Chicago, Reuben D. Mussey of Cincinnati, Benjamin W. Dudley of Lexington, Paul F. Eve of Nashville, and Charles A. Pope of St. Louis. Indeed, it was at a date several years later that Illinois supplied the Pacific coast with one of the early and foremost surgeons of that region, in whose honor a medical school was there subsequently designated by his name, and this in the person of Dr. Elias S. Cooper, formerly of Peoria and one of the founders of the Illinois State Medical Society, in 1850, who, it may be added, was the first member to present a surgical report of any kind to the state society, although but a brief one and as an "additamentum" to the anticipated report of the first committee on practical surgery, in 1851.

Largely, since about the same early period, medical centers, in the given territory, have met with several changes, with the various shifting centers of early populations, thus Willoughby in Ohio to Cleveland and Columbus; Lexington in Kentucky to Louisville; La Porte and Evansville in Indiana to Indianapolis and Fort Wayne; St. Charles, Rock Island and Jacksonville to Chicago in Illinois; while Cincinnati, Nashville, St. Louis and New Orleans appear to have continuously retained their original and early positions, with an appropriate increase of importance at least equal to the corresponding increase of municipal and state populations.

By such occasional comparisons only can it be possible to realize, in any appropriate measure, the limited facilities and primitive surroundings under which these eminently deserving pioneer members of our profession must have patiently borne their responsibilities and faithfully discharged their duties. It might be of much interest to us of to-day to here call a complete roll of such local society's membership during the few years of its existence, if we were fortunate enough to possess one at this late date, but such, we regret to state, is not at our command, even if any should still exist. Doubtless, if so called, it could be done to the discovery of the sad fact only that not a single member may now remain to answer to his own name or to respond on behalf of any of his fellows. It has been our privilege in past years to meet with but few, scarcely more than a trio, of these professional worthies whose distinctive personalities we now recall to mind; yet of all we may unhesitatingly say that, in their courage, energy and earnestness of purpose as pioneer physicians; in the faithful discharge of their laborious duties as such; in their unusual sacrifices in maintaining professional associations with their co-workers; in their unremitting efforts toward the advancement of their chosen profession, and in their strength of character under all difficulties, we may well find abundant assurances of their sterling worth, and that their lives and example have been a constant inspiration to us and should be to all others who may come after them.

May the medical profession of this city, which constitutes about two-thirds of the entire number of physicians resident within Winnebago County, fully appreciate the early efforts and distinguished services of their predecessors who founded this highly creditable local society, and be inspired to secure and put upon permanent record, ere it be too late, a full and faithful account, in the form of as complete a history as it may be possible to obtain, of these pioneer physicians and their early and commendable efforts in behalf of medical organization. In this connection it might be very truthfully added that a complete history of its medical profession and their necessary labors as such will be found to constitute or permeate an important part of the general history of any given community or locality wherein such may have lived and wrought, for who, indeed, more constantly than the physician is to be found dwelling in and identified with every city, village and hamlet, and who more nearly than he may be consistently said to enter into every home and to reach every fireside in the land?

Dr. James L. Reat, of Tuscola, has devised a method of treating extensive burns of the arm, illustrated by the accompanying cut, for the use of which we are indebted to *Red Cross Notes,* the publishers being Johnson & Johnson, manufacturing chemists of New Brunswick, N. J. The cut will explain the method of treatment by means of the zinc oxid plaster and wire frame without further description.



Dressing for Extensive Burns.

Dr. James L. Reat, of Tuscola, Ill., suggests the method shown in the above drawing and reports the case of an extensive burn (involving all the anterior portions of the body) where the skin, the subcutaneous connective tissues, muscles and fascia of the palmar surface of the arm were all destroyed. The dorsal or upper portion of the arm was sound. "Z O" adhesive plaster was applied on the portion which had not been burned, from dorsum of hand to deltoid muscle, then loops of plaster were attached to the long strip with tapes through the loops. The arm was lifted up out of its slough and suspended by a semicircular form placed over and parallel with the arm, bringing the under surface to view. The recovery was rapid.

COUNTY AND DISTRICT SOCIETIES

ADAMS COUNTY.

Regular Meeting Dec. 9, 1907.

The Adams County Medical Society met on the above date in the Elks Club Rooms, with the officers and a goodly number of the profession in attendance. Under the proper heading Dr. L. H. A. Nickerson was appointed as our auxiliary member of the Legislative Committee of the State Society. Applications for membership from Dr. J. A. Mitchell, Ursa; Dr. J. Lenne Aleshire, Plainville, and Dr. W. S. Wolfe, Quincy, were read and referred to the Board of Censors. Drs. W. E. Doane, of Beverly, and John C. Steiner, of Golden, were elected to membership at this meeting. The Board of Censors reported adversely on the application of Dr. Wm. John Meyer, Quincy, on account of certain objectionable lines on his sign, and recommended that his application be laid over until such objectionable features should be removed and until he had passed an examination, practical in character, before the Board of Censors of this society. Dr. John L. Porter, of Chicago, was then introduced and addressed the society on the subject, "Painful Feet," a subject which he presented in a practical manner. After his address, in response to questions, he spoke on hallux valgus and Pott's disease. Dr. L. B. Ashton presented an ingenious support, made of aluminum, for Pott's disease. From an early hour until after 12 noon Dr. Porter conducted an orthopedic clinic at Blessing Hospital, where he operated upon a variety of cases, including a rachitic deformity in the legs of an 8-year-old colored girl. In this child there was extreme deformity, the bones of the legs bowing both anteriorly and outwardly. The Grattan osteoclast was brilliantly used. Other cases were represented by the different forms of talipes, congenital and paralytic. He demonstrated and gave clinical talks on cases of hip-joint disease, spastic paralysis and contractures resulting from cerebral lesions. He showed a case of spondylitis deformans in a 16-year-old boy, and said that such a case in one so young was extremely rare. The clinic and demonstrations were well attended and the universal comment was that it was one of the most enjoyable and profitable days the Adams County Medical Society had ever enjoyed. Dr. Porter by his skill, his unassuming and great kindliness of manner made a friend of every member of this society. A hearty vote of thanks was extended to the Doctor for the pleasure and profit of the day.

Regular Meeting, Jan. 13, 1908.

The Adams County Medical Society met on the above date in the Elks Club Rooms, with the officers and a large number of the physicians of Quincy and Adams County in attendance. The application for membership of Dr. Wm. John Meyer, which was held up by the Board of Censors at the December meeting on account of his unprofessional door sign, was withdrawn by the Doctor with the consent of the society. Dr. E. H. Toole petitioned for reinstatement in the society and will be received when the back dues are met. Upon favorable reports by the Censors the following gentlemen were elected to membership: Drs. J. A. Mitchell, Ursa; J. Lenne Aleshire, Plainville, and W. S. Wolfe, Quincy. Luncheon was served at the Hotel Newcomb. At 1:30 the society was called to order by the president, who introduced Dr. J. F. Percy, of Galesburg, who gave an inspiring address on "The Relation of the Physician to His County Society." Dr. Percy is one of the working leaders of our profession and always has a warm welcome from our society. Then came Dr. Carl E. Black, of Jacksonville, councilor of this district, who gave a clear, lucid and highly instructive address on "Case Reports and the Necessity for Keeping the Same." Dr. William L. Baum, of Chicago, president of the Illinois State Medical Society, was the last speaker and took for his subject "Erysipelas and Its Treatment." To say that his address

was that of a master in medicine is but to speak the truth. At the conclusion of the same a rising vote of thanks was expressed to our distinguished visitors. Dr. Joseph Robbins then offered the following resolution:

WHEREAS, During the year just closing this society has enjoyed the presence and the instruction of several eminent medical men from abroad, who have freely given us their time and their best thought; therefore, in recognition of the fresh impetus their distinguished service has given to professional study among our fellows, and as reflecting the present delight and profit with which we heard them,

Resolved, That Drs. L. Harrison Mettler, Daniel C. Eisendrath, Emil Ries, Alfred C. Croftan, James F. Percy, Joseph B. Bacon, Carl E. Black, John Lincoln Porter and William L. Baum be, and are hereby, constituted honorary members of the Adams County Medical Society.

This resolution was enthusiastically and unanimously adopted. The society then adjourned. CLARENCE A. WELLS, Secretary.

PAINFUL FEET.

JOHN L. PORTER, M.D., CHICAGO.

I have chosen the general title of "Painful Feet" for my subject because it is a convenient descriptive term for a group of affections of the foot, which vary very much as to their etiology and pathology, but have all the common symptoms of pain. In fact, the pain is the one important thing about them all from the patient's point of view and for which he seeks relief in nearly every case. It is the recognition of the various diseases and conditions which produce pain in the feet that I wish particularly to call your attention to.

To begin with, it is because the feet have to bear the weight of the body and the arches and levers composing the foot are subjected to such a strain in supporting and propelling the body that the pain is located in the feet. In many conditions underlying painful feet the hands would be the seat of the pain if we were obliged to walk upon them. And our very dependence upon our feet in getting about our daily occupation lends added importance to affections of those extremities. We can suffer considerable pain and disability in the hands or other portions of the body and still keep busy, but when one's feet go back on him he is "down and out" in every sense of the term.

And right here at the outset I want to impress upon you the necessity of careful examination in every case, not only of the feet, but of the patient. To listen to a patient's history of chronic pain in his feet, steadily increasing with more or less disability, and tell him he has rheumatism, and fill him up with salicylates and send him on his way, without even examining him or his feet, is surely a travesty on the practice of medicine, but a common one. Surely, rheumatism, like charity, covereth a multitude of sins, but chiefly in medicine, sins of omission. Probably 75 per cent. of the cases of painful feet that come to our attention give a history of having been treated for weeks or months for rheumatism, and when the matter is sifted to the bottom and a correct diagnosis is made, not 1 per cent. is due to that disease.

Pain has been so synonymous with rheumatism in the past, at least, where joints were concerned, and our medical conception of rheumatism has been so hazy that the term has been a very convenient one to us when we didn't know what the matter was, but with our better knowledge of joint diseases and of the pathology of true rheumatism it is time to realize that, so far as painful feet are concerned, the chances are 75 to 1 against that being the actual trouble.

Without doubt the most frequent of the painful foot affections is flat-foot of some degree. The term flat-foot is generally used to designate a breaking down of the longitudinal arch, but clinically there should be recognized three different degrees of flat-foot, and for the sake of clearness I would call them, first, weak-feet; second, flat-feet; and, third, rigid-flat-feet.

Weak-feet are those in which the arch becomes obliterated when the patient stands, due to relaxation of the tarsal ligaments, but in which some active

pronation and supination is still possible. Such cases are apt to complain of pain in the latter part of the day and of extreme fatigue upon long standing or walking, and the pain is as frequently referred to the dorsal and outer surface of the foot as to the inner plantar region, although tenderness about the scaphoid is usually present. Such feet are seen more frequently in children and young adults. Support of the arch by strapping in the supinated position and the wearing of a proper shoe with a triangular heel results in a cure if the patient will exercise the foot daily in a way to strengthen the tibial muscles.

Group two, genuine flat-foot, is a condition in which the arch is flat when the patient is not standing, active pronation and supination is lost and passive attempts to supinate the foot causes pain. Tenderness, often exquisite, is found about the scaphoid and os calcis and the patient walks with a halting gait. These cases often complain of severe pain on first arising which wears off later, after they have been about with shoes on, but later in the day they may have pain up the leg to the knee or even to the hips, and occasionally severe backache, especially in the lumbar region. Such feet require as a preliminary treatment, prolonged rest and immobilization in a supinated position, followed by a rigid support to be worn in a properly made shoe. My custom is to place a triangular felt pad under the scaphoid and put the feet up in plaster-of-Paris in as extreme supination as the patient can stand. This is kept on for from 2 to 4 weeks, according to the severity of the case, and it is really astonishing to see how much improvement is secured. The patient is made perfectly comfortable at once and usually when the cast is removed the foot is quite freely mobile, pronation and supination have returned, the tenderness is gone and the patient considers himself able to begin walking at once, but, unless a proper support is at once given the foot, the trouble soon recurs. And right here is the proper place to describe what is a proper support and to correct some popular ideas about foot-plates.

In find the average practitioner has the idea that all cases of flat-foot require foot plates, that it makes little difference what kind of plate is used, and that if he sends the patient to a shoe store to buy an arch support, as they call them, or tells him to go to some instrument maker and have some plates made, his patient will be relieved. All three of those ideas are erroneous. Some cases are best treated by foot plates at once and many cases are benefited by the use of foot plates during some part of the treatment, but all the foot plates that have been forged since the time of Tubal Cain would be of no value in many cases, but positively harmful. When the patient appears to the shoemaker for a support he picks out one of the various styles of arch supports that he considers the proper size, puts it into the shoe, and collects 25 cents to a dollar, and sends the patient on his way blissfully ignorant that he has not done all that needs doing. The plate may give relief for a time or may become so painful in a few hours that the purchaser can not wear it. In 90 per cent. of the cases they have to be discarded eventually and the patient seeks more expert advice. When a patient is sent to an instrument maker his usual method is to make an outline drawing on a piece of paper of the patient's foot, over this he traces an outline of the shoe, and with these he traces an outline of a piece of metal called a "blank," which he puts into a vise with a wooden block shaped like the arch of a foot, and over this he hammers out the particular style of foot plate which he is accustomed to make, puts it under the patient's foot, asks him to stand upon it, and if it does not hurt he puts it into the shoe and tells him to wear it. If it hurts he raises or lowers the arch, or bends the edge until it is comfortable. Occasionally he makes a plate which gives support in the right place, and the patient by wearing it constantly, and occasionally having it elevated, gets along very comfortably. But as a matter of scientific accuracy and anatomic good sense he might just as well put a china plate into the vise and try to hammer out a set of false teeth. For there are no two feet alike and a plate to be curative must be made with an accurate knowledge as to where the trouble lies anatomically and for the particular case in hand.

And now we come to the third and most severe form of flat-foot, the rigid-flat-foot. In these cases the foot is pronated and cannot be either actively or pas-

sively supinated. The tarsus, especially the scaphoid and astrgalus, are rotated inward and downward, often to such degree that the scaphoid comes in contact with the floor, the astragalus is seen projecting beneath the skin, the arch is entirely obliterated and the patient walks with a halting, shuffling gait and with the feet turned out. Pain is often less severe in these cases than in either of the first two classes, because the stage of severe painfulness is past, as the ligaments are relaxed and stretched to their utmost, and the foot has a bony support, but the patient is extremely disabled, can only walk short distances without fatigue, and can not run at all. All motions at the ankle are slight, and in fact the foot is little else than a stiff unyielding stump for the leg. Such cases can only be improved, the foot can never be restored to its normal flexible, elastic condition. Such feet are usually seen in adults past 35, though occasionally they are found in young adults, and I have seen 2 or 3 in children at about adolescence. The only treatment that avails anything is surgical. The patient must be given an anesthetic. When complete muscular relaxation is secured we often find that with a McCurdy or Thomas wrench, the adhesions between the bones can be broken up, the shortened ligaments torn and stretched, and a fairly good restoration of the tarsus secured by sheer muscular force. In many cases the peronei muscles and tendons have become so contracted that they offer a great obstacle to reduction. In those cases excision of one-half to one inch of both the peroneus longus and brevis, just behind and above the external malleolus, facilitates the reduction very much. Where these measures are insufficient a cuneiform osteotomy, removing a bony wedge from the internal border of the tarsus, or an astragalectomy, is the only resort. Whatever procedure is undertaken it must be thorough enough to permit the foot to be put up in plaster-of-Paris in a supinated position. This is maintained for from 4 to 8 weeks, depending upon the amount of traumatism that has been inflicted, and it is often surprising to find how much the foot has improved in comfort, usefulness and motion following such severe measures. After the tissues have entirely recovered from the operation some form of a rigid support is devised for permanent use and the patient is encouraged to begin putting a little weight upon the feet, and massage, hydrotherapeutic and passive motion is begun. Some of these feet are thus made much more comfortable, elastic and useful, but it requires from 2 to 6 months to secure results that will permit the patient to walk about with his shoes on again.

Gonorrheal arthritis involving the tarsal articulations, and especially the articulations of the os calcis, are much more frequent than we used to suspect, in fact, that peculiar condition known as painful heel is so often the result of gonorrheal infection that we suspect it in every instance. Baer of Johns Hopkins has demonstrated the gonococci in scrapings from the periosteum in quite a number of these cases. Besides the os calcis, any of the other tarsal joints may be involved, and as the gonorrheal inflammation affects the peri-articular more seriously than the articular tissues, we find in the structures about the foot that have been involved softened, boggy and relaxed during the acute stage of the trouble, and consequently a degree of flat foot or weak foot usually accompanies a gonorrheal arthritis. Another peculiarity of these cases is that the arthritis usually develops after the subsidence of the acute urethritis, often during the gleety stage. The history of the case is usually a sudden development of pain about the arch of the foot, especially on walking, which grows steadily worse until the patient is incapacitated. With this is often a slight swelling and redness, and if a recent urethritis is confessed, a diagnosis of gonorrheal rheumatism is promptly made. But in many instances the arthritis occurs so long after the urethritis that both patient and physician fail to attach any causal relation to the latter, and especially in those cases which develop slowly and without acute inflammatory symptoms, as many do. Later the foot resumes a practically normal appearance except with some pronation and flattening of the arch, but the patient still complains of great tenderness under the heel, corresponding to the tubercle of the os calcis. This pain is only felt when he walks, but examination reveals greater or less tenderness all about the os calcis, and even of the scaphoid. An *x*-ray of the foot later in the disease, say several months after the

onset, often reveals bony exostoses at the seat of the tenderness, usually under the os calcis and sometimes at the point of attachment of the tendo-Achillis.

Morton's metatarsalgia is a cramp-like exceedingly painful affection of one or more of the metatarso-phalangeal joints. It occurs more frequently in adults and in women more often than men. The pain comes on suddenly and almost invariably when the patient has his shoes on, and is described as cramp-like and excruciating, often radiating along the foot and up the leg. The patient has to sit down at once and remove the shoe and rub and squeeze the front of the foot and work the toes. This usually gives relief. The attacks may occur only at long intervals or may be so frequent as to disable the patient. The trouble is caused by the flattening of the anterior or transverse arch of the foot when compressed by the shoe so the ball of the foot has not room to spread. (Analogous to the pain produced in the hand by squeezing the metacarpo-phalangeal joints when relaxed.) The third and fourth joints are most often the seat of the pain. The wearing of narrow, high-heeled shoes predisposes to the trouble as the weight falls largely on the heads of the metatarsals while they are held in a position to work at great disadvantage.

The treatment consists in wearing a stout shoe with a low heel and with room enough across the ball to allow of inserting a metal or felt insole with a lift corresponding to the normal arch that will prevent the dropping of the metatarsal heads and hold the foot in normal shape. Some cases are immediately relieved by strapping the ball of the foot snugly with a thin felt wedge under the heads of the metatarsals. In a number of cases the pain and disability has been so great that resection of the head of the offending metatarsus has been resorted to. The operation is successful, but it destroys the symmetry of the foot as it makes the toe shorter than the others, and I have never seen a case so severe that it could not be relieved by mechanical treatment.

72 Madison Street.

BI-COUNTY (IROQUOIS-FORD.)

The fourth annual meeting of the Bi-County (Iroquois-Ford) Medical Society, at Watseka, Ill., Dec. 3, 1907, was one of the most successful and largely attended held in the history of the organization. After dining at the Iroquois Hotel all repaired to the County Court-room. Order was called by the president, S. D. Culbertson, of Piper City. Some routine business was then settled, after which the following physicians were elected to membership: Drs. D. W. Gross and Wm. Hecker, of Watseka; J. S. Cunningham, of Gibson City; M. R. Marsh, of La Hogue; and I. D. Kelsheimer, of Paxton. The following were elected officers for 1908: President, T. N. Boue, M.D., of Loda; vice-president, J. Y. Shamel, M.D., of Gibson City; secretary, Robert Lumley, M.D., of Watseka; treasurer, Horace Gibson, M.D., of Sheldon; censor, A. J. Newell, M.D., of Onarga; delegate to state medical society, O. O. Hall, M.D., of Milford.

SCIENTIFIC PAPERS.

"Retrodisplacements of the Uterus," by L. P. Dawes, M.D., of Chicago. Although Dr. Dawes largely limited himself to operative treatment of these conditions, his paper was exceedingly interesting and instructive. He dwelt chiefly on a modification of the Gillian method of shortening the round ligaments, which he considered the procedure of preference in cases not complicated by pus, or in which no adhesions existed that could not be broken up without too much damage to other structures.

His technic is as follows: "After the usual preparation, the peritoneal cavity is opened by an incision in the median line, below the umbilicus, three to four inches in length. Other necessary work having been done, and the intestines packed away from the pelvis, each round ligament is caught with a hemostat, 1½ inches from the uterus. Then the abdominal wall is pierced about 1½ inches above the symphysis pubis, and just beneath the anterior sheath of the rectus muscle, with a curved, puncturing, tenaculum forceps, which passes to the outer border of the rectus, punctures the posterior sheath, and keeping just outside the

peritoneum, follows the abdominal wall outward until it reaches the broad ligament. Then into the broad ligament, toward the uterus, still beneath the peritoneum, until the point where the hemostat holds the round ligament is reached. Then, after releasing the hemostat the round ligament is drawn into the track of the wound made by the tenaculum forceps and out at the median incision beneath the anterior sheath of the rectus. The same is then done on the other side. Usually these ligaments can then be brought together and sutured to each other in the median line. Before suturing, however, it is necessary to adjust the tension on these ligaments, the proximal ends to draw the uterus up and forward, the distal ends to close up the opening between the ligaments and the anterior abdominal wall. If not long enough to bring together in the median line, each round ligament may be sutured to the under surface of the anterior sheath of the rectus muscle. Some advantages claimed for this operation are: 1. In many cases other work in the abdomen, or pelvis, is required. 2. The stronger portion of the round ligament is utilized. 3. The direction of the pull is upward and almost forward. 4. The operation may be quickly and safely done. 5. It leaves no free bands in the peritoneal cavity by which an intestinal coil may be caught. 6. Less suturing is required than in Ferguson's modification of the Gillian operation. 7. It does not interfere with pregnancy. 8. Drawing up the round ligaments in this way at the same time shortens the broad ligaments, thus reinforcing the uterine support. 9. So far as known to the author, no bad results have followed."

Discussion by Drs. Miller, Lumley, Newell, Ross, Hall and Brown followed, which was closed by the author of the paper.

"A Résumé of the Work Done by this Society During the Present Year," by S. D. Culbertson, M.D., of Piper City. Dr. Culbertson's paper was an able condensation and recapitulation of what the society has accomplished during 1907. Although he did not say so, Dr. Culbertson had much cause for self congratulation on the success of the work. The society has gained greatly in membership and influence, and the meetings have been interesting, instructive and well attended.

Votes of thanks were then tendered the retiring president and the secretary for able and efficient services during the year, and Judge John H. Gillan for the use of his court-room. Drs. D. W. Miller, J. S. Near and J. C. Bucher were appointed as Committee on Public Health and Legislation. Society adjourned.

ROBERT LUMLEY, Secretary.

BUREAU COUNTY.

The twenty-eighth semi-annual meeting of the Bureau County Medical Society was held at the city hall, Princeton, Ill., Thursday, Nov. 14, 1907. Those present were: C. C. Barrett, M. H. Blackburn, M. J. Coveny, J. H. Franklin, O. J. Flint, J. P. Garwood, William C. Griswold, M. N. Gernsey, Clyde Horner, W. M. Kaull, Frank Lewis, W. A. Linebery, J. H. McLean, A. E. Owens, C. A. Palmer, F. C. Robinson, C. C. Scott, J. F. Taylor, L. H. Wiman and W. D. Chrisman. Secretary and treasurer's report of the preceding meeting adopted as read. The special committee appointed to investigate the unjust cutting of physicians' bills by the Board of Supervisors reported that they had consulted an attorney, who advised that a committee be appointed and any such cases be investigated by said committee, and, if deemed advisable, make a test case of same. The suggestion was accepted, and a motion was made that a standing committee be appointed, which shall be known as the "Medical Legal Committee," whose duty it shall be to investigate any cases reported wherein the physician's bill has been unjustly cut. C. A. Palmer, J. H. Franklin and M. H. Blackburn were appointed on said committee. A letter was read from the editor of the ILLINOIS MEDICAL JOURNAL in regard to helping the advertising columns of the JOURNAL by purchasing supplies from houses which advertised in the JOURNAL. A motion was made that this letter be placed on file. Carried. A letter was also read from Dr. Egan, secretary of the State Board of Health, protesting against a repeal

of the law providing for payment for reports of deaths and births. Dr. C. A. Palmer moved that the Society write to representatives and senator from this district, protesting against repeal of said law. Motion carried.

TREASURER'S REPORT.

—Receipts.—

Balance on hand May 9, 1907	$ 60.80
Receipts from dues	75.50
Total receipts	$136.30

—Disbursements.—

1907.		
May 18, envelopes	$ .53	
May 20, by draft to Weis	99.00	
May 21, by draft to Hollister & Ensign fund	3.00	
June 3, by draft to Weis	5.00	
November 1, envelopes	.86	$108.39
Balance on hand Nov. 14, 1907		$ 27.91

The following papers were read: The Abdominal Incision, by Clifford U. Collins, of Peoria, Ill.; A Case of Uterine Cancer, by S. W. Hopkins, of Walnut, Ill.; Medical and Surgical Treatment of the Prostate Gland, by J. F. Percy, of Galesburg, Ill.; Appendicitis from a Surgical Standpoint, by C. C. Scott, of Princeton, Ill. The papers were all excellent and brought out much interesting discussion.

Officers elected for ensuing year: A. S. Rummell, president; J. F. Taylor, first vice-president; C. F. Horner, second vice-president; O. J. Flint, secretary and treasurer. C. F. Horner was appointed delegate, and O. J. Flint alternate to the State Medical Society meeting, to be held at Peoria, Ill. D. C. A. Palmer was appointed to represent the society on the State Medical Legal Committee. Visitors: J. F. Percy, Galesburg; Drs. Kemp, Henry, Wm. O. Ensign, Rutland; Dr. Collins, Peoria; Mrs. C. A. Palmer, Princeton; Edgar Cook, Mendota; Dr. Persis White, Princeton.

COOK COUNTY.

Regular Meeting, November 6, 1907.

A regular meeting was held Nov. 6, 1907, with the President, Dr. Henry B. Favill, in the chair. The subject for discussion was a symposium on Acute Articular Rheumatism. Papers were read as follows: 1. Etiology of Acute Articular Rheumatism, Dr. George W. Webster. 2. Etiology, Bacteriology and Pathology, Dr. L. M. Loeb. 3. Cardiac Complications, Dr. Robert B. Preble. 4. Treatment, Dr. Frank Billings. The symposium was discussed by Drs. N. S. Davis, Robert H. Babcock, William J. Butler, Charles A. Parker, C. J. Lewis, A. W. Baer, C. S. N. Hallberg, R. H. Brown, George W. Webster, L. M. Loeb, Robert B. Preble, and the discussion closed by Dr. Billings.

DISCUSSION ON THE SYMPOSIUM ON ACUTE ARTICULAR RHEUMATISM.

Dr. N. S. Davis:—After listening to the papers, I feel like emphasizing two or three points a little more than they have been. In the first place, my experience has impressed me with the very frequent occurrence of endocarditis, especially in children, with the most trivial evidence of rheumatsim or none except sore throat. Therefore, I have come to look upon all cases of even trivial sore throat in children with anxiety because of the possibility of endocarditis developing in connection with it. Children, who are prone to tonsillitis, are almost invariably prone to rheumatism, and, as Dr. Billings has said, it manifests itself usually, if it does at all, in atypical form. For many years I have been impressed with the frequent almost uniform occurrence of a digestive disorder preceding attacks of rheumatism and of tonsillitis. I have come to regard the stomach trouble as a part of the disease, and as possibly pointing to the channel through which infection takes place. If the tonsils are the channels through which infec-

tion takes place, the occurrence of indigestions may be a condition predisposing to tonsillitis. For such digestive disorders cause furring of tongue and congestion of pharynx, change which can make infection of tonsils easy. Moreover, they lower vitality, and in that way also open the portals to infection.

These statements lead to another point I wish to make, and that is for the prevention of rheumatism and of its recurrence a good digestion and full and regular bowel movements must be maintained and if possible a clean condition of the throat. I think this is of the greatest importance from the standpoint of prophylaxis.

The observations of Flint and Sutton have been in my mind for a long time, and they have interested me very much because of the natural duration and course of the disease which they reveal to us and which must be kept in mind in estimating the value of remedial agents and procedures.

By treatment we seem to shorten the course of the disease little or not at all. For instance, Flint's cases, as I remember them, averaged about 26 days, but of them there were 3 which recovered in a little less than 15 days, and there were a few more which lasted for 56 days or thereabouts, and the great majority ranged somewhere between these two extremes, making an average of about 26 days. The extremes are what we observe commonly under various kinds of treatment. Although we can not surely shorten the course of rheumatism by treatment, we can contribute greatly to the patient's comfort.

Dr. Robert H. Babcock:—Mention has been made by the speakers this evening of the frequency of throat infection in the etiology of rheumatism. This has been greatly impressed upon me in the last few years, because practically every adult or child that consults me with evidence of chronic endocardial lesion gives more or less evidence of an unhealthy throat. I have been so much impressed with this that in the prophylaxis of rheumatism I make it a strong point to insist on having the throat put in as healthy a condition as possible, having the tonsils removed when they show they are chronically diseased, and in all cases urge the use of gargles, antiseptic gargles and sprays, not so much with any idea that they will destroy the bacteria in the throat, but that they may keep the tissues in a healthier condition. As Dr. Billings has said, the throats of children are so rich in lymphoid tissue that they furnish a ready soil for the growth and development of bacteria.

I would like to emphasize the fact that endocarditis in childhood may be the only evidence of rheumatism. So important is this that I believe every family physician who has the care of children should in any case, in which the child is not well, always pay attention to the heart; make repeated examinations of the heart, since he will frequently stumble upon evidence of inflammatory action.

Lastly, I should like to speak of the effects of rheumatism on the myocardium. As stated by Dr. Preble, myocarditis is much less common than endocarditis or pericarditis; but I believe we are apt to neglect the effects of a rheumatic endocarditis upon the myocardium. Let us take, for instance, a simple case of endocarditis of the mitral valve. The mitral murmur should replace the first tone gradually with the increasing leak. But we frequently see in children who develop this condition that the murmur replaces the first tone with remarkable rapidity, a very much greater rapidity than we can explain on the hypothesis of an inflammation of the leaflets alone. In these cases there are all the signs of a dilatation of the left ventricle. There may or may not be a parenchymatous myocarditis; but whether there is or is not, there is in these cases such an amount of dilatation that the mitral insufficiency is greatly intensified by the effects of the disease on the myocardium. This is proved by the fact that months of enforced rest, or perhaps of absolute rest, and after active inflammation has subsided, the long-continued use of digitalis, associated with rest, will bring about such a reduction in dilatation that the murmur not only becomes less intense, but the first sound will reappear, and the leak become very much less grave than we at first feared it would be. I feel, therefore, that in the management of these cases we can do

a great deal in the prevention of serious cardiac embarrassment and inadequacy if we insist on rest for a much longer time than we are usually apt to do.

Dr. William J. Butler:—This discussion seems to have centered around rheumatism and endocarditis in children. If Dr. Preble refers only to those cases of rheumatism in children which have articular swellings, then I would not question the statistics cited as to the frequency of endocarditis in children. But in view of the subsequent statements made by him as to the manifestations of rheumatism in children, I wish to say that if the statistics from Johns Hopkins Hospital or from the St. Anna Children's Hospital are founded on all such cases of rheumatism in children, I believe them to be absolutely erroneous; that is to say, that 95 per cent. of female children and 64 per cent. of both sexes with rheumatism develop endocarditis. If we regard a systolic murmur as diagnostic of endocarditis, then I do not question these statistics. A study in auscultation of the normal heart in later childhood, in the recumbent position, will convince one that a systolic murmur over the apex or at the base of the heart is frequently found. They are accidental and the most of them are cardio-respiratory murmurs.

A systolic murmur assumes diagnostic importance as a sign of endocarditis in children when the child's heart shows other evidences of changes having developed. Of course, from a therapeutic standpoint, a child that has rheumatism and presents over the heart a systolic murmur, even in the absence of all other signs, should be treated as though he had endocarditis. But a systolic murmur *per se* is not diagnostic of endocarditis in a child; of that I can assure you, from auscultation of the heart in a great number of healthy children. The reason for this large percentage is due to the fact that accidental murmurs are frequently misinterpreted as organic murmurs.

Then, again, as to the healing of a mitral endocarditis in the case of an acute aortic and mitral endocarditis. I believe that endocarditis, when once established never heals, so that the evidence of it entirely disappears. At least, I think this view is the generally accepted one.

In order to speak of a matter in the prophylaxis of rheumatism, I trust you will pardon my mentioning a few statistics taken from a small number of a lot of records collected by me during the past few years on question of the association of tonsillitis, rheumatism, chorea and endocarditis. Of the 30 unselected cases of chorea, taken as they come to us in the clinic, 22 had a history of tonsillitis, either just prior to or during an attack of chorea; 19 of the 30 cases gave a history of rheumatism; 3 of the 19 cases that had rheumatism were said not to have had tonsillitis, thus making 25 cases in all that had either tonsillitis and rheumatism, rheumatism and tonsillitis, either in close relation to the developing chorea or slightly removed from it.

Nine of the 30 cases had endocarditis, 7 of whom had mitral lesions, 6 being mitral insufficiency, 1 mitral insufficiency and stenosis. One had aortic insufficiency and another aortic and mitral insufficiency. All of the endocarditis cases except one had had rheumatism. In one a history of a sore throat only was obtainable. Five of the 30 cases had not had tonsillitis, rheumatism or endocarditis.

In summarizing the above, 22 of 25 cases of chorea had a history of tonsillitis. All of the rheumatism cases, except 3, gave a history of tonsillitis. While this small number of cases is too few to admit of conclusions, they illustrate the point I wish to make, and that is, that a tonsillitis occurring in a child is not to be looked upon as a light transient matter, but rather one of considerable moment, that may be the forerunner of various rheumatic manifestations, such as joint aches, articular swellings, chorea, endocarditis, myocarditis or pericarditis, that the advisability of removing enlarged tonsils in children before trouble has started, or of removing tonsils already sources of mischief before giving an opportunity of systemic infection from this source to develop should be considered as of paramount importance in the prophylaxis of rheumatism.

In regard to treatment, Bier's method has been applied considerably of late in Germany in the treatment of articular lesions of rheumatism, and some, as Klemperer, are quite enthusiastic as to the result. There is little doubt that many

cases, in view of their being, in all probability, of bacterial origin, would be benefited by this means, as are some other joint infections. It will of necessity, however, sometimes fail, as it does in other infections, because of the fact that the value of it rests in induced autoinoculations, which, of course, can never in such a manner be intelligently regulated, and, in consequence in some instances, where autoinoculation is of proper degree, will be beneficial, and in other instances where this is not the case, it may prove valueless or do actual harm.

Dr. Charles A. Parker:—With regard to the question spoken of by Dr. Butler and others, I would like to know if there are any special statistics showing freedom from rheumatism in those who have had their throats treated by the present methods of practice and their tonsils and adenoids thoroughly removed. In other words, do those children have rheumatism, and if so, what proportion of them have it after their throats have been treated and tonsils have been removed? Possibly some specialist here can answer that question. At any rate, I would like to have that phase of the subject discussed more freely.

Dr. C. J. Lewis:—I notice that veratrum viride has been spoken of as not indicated in rheumatic endocarditis. In regard to the use of veratrum or veratrin, as put up by Parke, Davis & Co., I want to say that it, in connection with a mild solution of iodid of potash in my hands in recent years, has been very effective in overcoming articular rheumatism. It relieves the pain practically as would morphin. It gradually diminishes the hyperpyrexia, when present, although of late years I have not seen much of that. I have had better results with this remedy in handling these rheumatic cases than I have had for years with salicylates. Perhaps I would hesitate to use it in as large doses as these in cardiac lesions. I have used 1/60 grain of veratrin, and in some cases 1/32, every three or four hours, and have had excellent results from the administration of it with iodid of potash.

Dr. A. W. Baer:—In regard to the use of the salicylates, the salicylic acid of to-day is nearly all synthetical, and Dr. Billings spoke of using the oil of birch and oil of wintergreen, and that was originally the source of most of the salicylic acid, and the reason why we do not get as good results to-day as formerly from the use of salicylic acid is because of its being a synthetic product, more or less irritating to the mucous membranes.

Dr. C. S. N. Hallberg:—It is not a question of getting sufficient effects of salicylic acid; in a way, you get too much of the effects of the acid. Synthetic salicylic acid causes disturbance of digestion, and that is what makes the use of salicylic acid in large doses so inacceptable.

I would like to call attention to the external use of salicylic acid in 10 or 20 per cent. ointment of lanolin and olive oil, applied to the joints by inunction. This has been found very effective. The oil of wintergreen or the oil of birch mixed with an equal volume of olive oil may be employed in the same way. It is said that the effects of salicylic acid are derived by inunction much more quickly and uniformly, without the digestive disturbances, than if taken by the mouth. This may be well worth considering.

Dr. R. H. Brown:—I have noticed that cerebral rheumatism has been mentioned a few times as being very unusual. It has been my peculiar fortune in a limited general practice to have seen five cases of rheumatic meningitis, and a very brief résumé of the symptoms of this disease in these cases may not be amiss.

The first case was a young man, 21 years of age, seen about 13 years ago. The trouble began with a rheumatic inflammation of the knee and ankle joints, and, rapidly coming on, there followed marked nervousness which amounted to almost a hysteria. A maniacal condition developed, deepening gradually inside of a week or ten days into marked coma. The coma continued and was so extreme that for nearly three weeks the patient lay apparently dead to the world, with involuntary discharges. Then, little by little, the symptoms improved, in inverse order to their onset, the coma going into mania, then into hysterical nervousness,

and the patient recovered entirely in the course of seven weeks. The temperature did not exceed 102.5.

The second case was almost identical with the one just cited. She was a young woman of 35 or 36, and the case occurred about four years later. It is unnecessary to go over the symptoms, as they were the same as in the first case.

The third was one in which there was some question as to the diagnosis. This case began more with brain symptoms than with joint symptoms, although the latter showed up in the first few days; but they were mild. The case went on to almost complete loss of cerebral function and then improved in exactly the same manner as the other cases. At the end of seven weeks, just as the patient, a young woman of 26, was beginning to recognize people, the symptoms again deepened and went through precisely the same cycle except that the patient did not swallow, so that we were compelled to feed peptonized foods through a tube for six weeks. As the other symptoms cleared away, there remained insanity, which lasted for several months. This gradually tapered off into headaches, and finally the patient recovered.

The fourth case, in a woman of 36, seen eighteen months ago, was more in the line of hyperpyrexia, in which the symptoms were very much more rapid, beginning with acute articular rheumatism of the ankle, knee and hip, with cardiac lesions, and accompanied at the start with hysterical symptoms, then mania, developing into coma, and rapidly showing vagus involvement, followed by weakness of the heart and finally death at end of sixteen days. Temperature in the case reached 105.

In the fifth case, a man of 54, seen last spring, the symptoms were those of acute pain of various larger joints and marked nervousness with complete loss of sleep, except as induced by morphin. Duration five weeks. Delirium and coma showed in the last three or four days and death came apparently from vagus involvement. Temperature in this case from 100 to 103.

Dr. George W. Webster:—I would like to refer to two points that were urged as objections to the view that rheumatism is an infection. One of these which Dr. Loeb referred to was the fact that Poynton and Paine had made many of their experiments or investigations on material obtained from the cadaver, and there is evidence, therefore, of this being a terminal infection. I might say that at least in one case where they have obtained a pure strain of germ, which they have cultivated, the patient is alive and well eight years after obtaining these micro-organisms from his body, so that it can not be regarded as a terminal infection.

Another point was the difficulty of obtaining cultures from the fluid obtained from the joints, this being urged as an objection. In this connection I desire to call your attention to a fact, well known to all of you, that in the ordinary tuberculous pleurisy you can not obtain the tubercle bacillus with any degree of readiness from the fluid, and that this fact is considered by clinicians and diagnosticians as the best evidence of tuberculous pleurisy, and in these cases of infection of the joints the micro-organisms are found not free in the fluid in the joints, but beneath the surface, just as in the heart they are found not in the circulating blood, but in the structures of the valves themselves.

Dr. L. M. Löeb:—I think Dr. Webster misunderstood me. I do not believe that anyone has the hardihood to deny that rheumatism is an infection of some kind. The only point I wished to bring out was that the specificity of the organisms, isolated by Poynton and Paine, has been questioned a great deal. Most of their work has been done on the cadaver. Almost all the cultures have been isolated from the heart's blood. There are a number of cases in which they have found the organism in the living human being, but a great many other investigators have worked with as extensive material as they had and failed to find any trace of any organism. There are at least half a dozen men who have made blood cultures to the number of 20 to 50 cases, and they have failed to find the streptococcus or any other organism in the blood. The same is true of the cultures from the joints. As I have said, no one denies that rheumatism is an infection; the

only question that has been raised is whether the organism that Poynton and Paine have isolated is the specific streptococcus, and is different from the ordinary streptococcus pyogenes. Morphologically and culturally, there have been found no striking differences. Several years ago it was claimed that this streptococcus had the power of producing hemolysis, that is, turning the blood cultures a chocolate brown or violet color; but of late Schottmüller has found that other strains of streptococci will do the same thing, and even Walker in the last year or two has acknowledged that none of the differentiating points he mentioned several years ago have held their ground at present. Still there are many things that favor its specificity, especially the inoculation experiments of Meyer, in which he produced rheumatic joint changes by this organism in a large percentage of cases, while the ordinary streptococcus pyogenes and with other pus organisms they occurred very rarely. The only question is as to the specificity of the organism, and there are many men who claim that the infective agent is the ordinary streptococcus and not the streptococcus rheumaticus. Other organisms have been grown from rheumatic patients, and the question whether the streptococcus is the only pathogenic agent in the disease is still open.

Dr. Robert B. Preble:—I want to say a word or two in regard to the statistics of McCrae and the Anna Children's Hospital, to which reference has been made by Dr. Butler, who seems to be unnecessarily disturbed about them. In the articles many of the details were not given, so that one is forced to draw the inference that if the cases were not of more than average severity they would not have been sent to the hospital, and therefore we can not say from the figures that 95 per cent. of all children which show rheumatic phenomena are going to have endocarditis, but that a large majority who are sick enough to be sent to the hospital are going to have it.

In regard to the diagnosis, I do not think anyone to-day would have the hardihood to make a diagnosis of endocarditis upon the existence of a systolic murmur, because everybody knows that there are many conditions which can produce a systolic murmur, and unsupported by other evidence, such a murmur would be no evidence at all. I wanted to bring out this one idea, that if you have to do with a child who has rheumatism, and it develops a systolic murmur which is distinctly audible, is present for a long period, you should give the child the benefit of the doubt. It does not make any difference whether you are wrong about endocarditis or not, but take care of the child as if it did have endocarditis, and if you make any mistake you make it on the safe side. That brings me to the point that Dr. Babcock and others referred to, and that is rest in these cases, and that may mean rest for weeks or months, or even years, and you are not going to lose any thing by such patients having this rest. If you are in doubt about letting the child up, this week or next week, put it off until the following week, and do not be in a hurry.

Dr. Billings (closing the discussion):—Perhaps I may be wrong with reference to the use of aconite, veratrum veride and other cardiac sedatives in the course of these infections of the endocardium or pericardium; but, it seems to me, the chief thing is rest of the heart, and one secures that by physical rest. An ice-bag over the pericardium will slow the heart, and in children a few drops of some opiate, enough to quiet, will put them at rest, there is less risk to the heart than if one uses these drugs. These measures slow the heart by reducing its work. I want to testify to what Drs. Babcock and Preble have said of the long time which is necessary to secure a complete balance of the heart that has been infected, especially in children. Sydenham said that it takes a wiser physician to know when not to give than when to give a drug. The longer we practice medicine the more this comes home to us.

As to the use of salicylates, I did not speak of their dosage. They reduce temperature. They stop or allay pain, and, it seems to me, that is their chief value in rheumatism. If one has had the experience of having had an acute attack of rheumatism, and knows the exquisite pain from which one suffers, and the delightful ease that comes from a good dose of salicylate of soda, he will give

it to his patients. When I had acute rheumatism I took over 200 grains of salicylate of soda every day, and while it made my heart thump and my ears ring, I was happy. While I would not give a patient as large doses as I took myself, I would put him under the influence of it. It is a good idea to combine a neutral soda with it, like the bicarbonate, and I commonly give the plain salicylate of soda, to which I add 15 to 30 grains of bicarbonate of soda, and have the druggist rub up in each powder a minimum of oil of wintergreen, oil of peppermint or oil of orange peel, which gives it a flavor. The patient may dissolve the powder in charged water or in plain water. That is usually pretty well borne. If it irritates the stomach, milk may be taken before it, or some other food.

As to the use of the salicylates externally, I think we have had more or less experience with them, using the oil of wintergreen, which contains on an average 90 per cent., and while perhaps it is not absorbed in that menstrum as rapidly as it would be in lanolin, still there is evidence it is absorbed by examination and finding the salicylic acid in the urine, and it seems to give some relief. It is not as efficacious, however, as when given by the mouth. We have no specific drug or drugs for rheumatism. We have drugs that will cut the fever short and cut the joint manifestations short, and in doing that we shorten the course of the disease, but I do not think we can call such drugs specific.

THE ETIOLOGY OF ACUTE ARTICULAR RHEUMATISM.

GEORGE W. WEBSTER, M.D., CHICAGO.

The only point concerning the etiology of acute articular rheumatism on which there seems to be a consensus of opinion is that it is of infectious origin. The nature of the infectious agent or agents is still a matter of controversy.

In a paper[1] read before the American Medical Association in 1902, I reviewed some of the current literature and outlined the four principal views or theories of its etiology which then obtained. They were, briefly, first, the view of Gustav Singer, first published in 1898, "that acute rheumatism is not a distinct disease, but a modified pyemia, due to the action of the streptococcus pyogenes, attenuated in their passage through the adenoid tissues of the throat." Second, the view of Achalme that "acute articular rheumatism is the result of a specific anaërobic bacillus." Third, "that rheumatic fever is not due to any particular organism, but is a particular reaction to varied infections. In other words, we may have a uniformity of lesions with a multiplicity of causes. The fourth view was that of Poynton and Paine "that acute rheumatism is an infectious disease due to a diplococcus, now generally referred to as the diplococcus rheumaticus."

My conclusions at that time were as follows:

1. Many organisms produce arthritis.

2. Probably all cases of acute articular rheumatism are due to infection.

3. Probably all organisms known to cause either acute articular rheumatism or other forms of arthritis also give rise to other pathologic conditions as well.

4. It would thus seem to be not merely a local infection or inflammation, but a general infection, the commonest seat of the principal lesion being the joints, but also involving the heart, both endocardium, pericardium and muscle, occasionally the meninges and other structures and caused by a diplococcus circulating freely in the blood. The diplococcus seems to be merely a germ capable of causing widespread inflammation, and tne joints are included in its sphere of action. Just as in pneumonia, we may have a general infection with local manifestations or inflammatory reaction in the meninges, the pleura, the endocardium, pericardium, postnasal space, peritoneum, lymphatic and lungs, the latter being probably the usual site of the localizing inflammation.

5. It is quite possible that there is some hereditary diathetic or constitutional peculiarity, the nature of which is completely unknown to us, which may favor infections in general, and possibly that of rheumatic infection in particular.

6. That there may be varying degrees of susceptibility depending on exhaustion, depressing influences, as cold and the like, seems reasonable. These are the occasions and not the causes. They favor but they do not cause.

1. Journal A. M. A., Jan. 10, 1903.

7. That susceptibility varies greatly there can be no doubt. Whether this depends on alkali tension has not yet been demonstrated, but it seems plausible on the ground of variation in the bactericidal action of the blood. This may explain the value of alkalies in the treatment of rheumatic affections.

A more extended reference to the work of Poynton and Paine may be of interest. The view of Achalme that it is the result of infection with a specific bacillus has not been substantiated. The attenuated pyemia theory has never been established and there are grave and seemingly insuperable objections to it.

THE DIPLOCOCCUS OF POYNTON AND PAINE.

In January, 1899, Poynton and Paine undertook the study of the bacteriology of rheumatism with the intention, if possible, of confirming the results of Achalme. In this they failed and abandoned the attempt. In eight successive cases, however, they obtained a diplococcus which grew in streptococcal chains, which did not thrive on ordinary agar or on serum agar, grew indifferently on blood agar and appeared to grow best in a liquid medium of milk and bouillon, rendered slightly acid with lactic acid. These organisms were isolated in pure culture on three occasions, from the blood of patients during life who were suffering from acute rheumatic pericarditis; also from the pericardial fluid after death, from the valves of the heart and throat of the patient; fragments of granulation from the valves of the heart of human beings, and also from the joint exudation, heart blood, urine from the bladder and cerebrospinal fluid of inoculated rabbits. These organisms when inoculated into rabbits produce polyarthritis, bursitis and tenosynovitis, multiple non-suppurative valvulitis and pericarditis, plastic pleurisy and pneumonia, a condition of the myocardium analogous to that found in the human heart as a result of rheumatic carditis. There are multiple joint swellings, wasting and pyrexia, thus closely simulating rheumatism in the human being.

When these organisms are passed from animal to animal similar symptoms are produced, but there is a tendency to increase in the severity of the cardiac lesions with lessened severity of the arthritic lesions. The organisms were found, not on the surface, but in the interior of the valves. In one case of chorea the diplococci were found in the perivascular lymph spaces and capillaries of the pia mater and in some parts of the motor areas of the brain. In September, 1901, they reviewed the bacteriology of the disease and brought the number of cases up to eighteen. They take the ground that rheumatism is not only an infectious disease, but that it is due to diplococcus infection, and point out emphatically that "the most ardent bacteriologist does not pretend that the presence of a micro-organism explains all the phenomena of rheumatic fever."

The organism described by Poynton and Paine is undoubtedly the same as that previously described by Triboulet in 1898, and Apert and Triboulet in the same year, and by Wasserman and Malkoff in 1899. Litten, as the result of the study of two cases and the inoculation of many guinea-pigs says that he sees no reason why this diplostreptococcus should not be regarded as the cause of acute articular rheumatism.

In 1905,[2] Poynton and Paine, after reviewing the recent literature and giving further results of their work, repeat and emphasize their former opinion, that acute articular rheumatism is a specific infectious disease and that true cases are always due to the diplococcus rheumaticus. They have now reported 35 cases in rabbits in which this organism produced the characteristic lesions. These organisms have been repeatedly isolated from the lesions of rheumatic fever and have, with remarkable constancy, produced the lesions of that disease in rabbits and monkeys.

In Osler's Modern Medicine, vol. ii, Poynton, after a careful review of the various theories, says, "Acute rheumatism is a specific disease, and, so far as our knowledge goes, owns but one exciting cause, variously called a diplococcus, streptococcus, or micrococcus."

2. The London Lancet, Dec. 16, 1905.

The work of Beattie,[3] Poynton and Shaw,[4] Harris,[5] seems to strengthen the probability that the diplococcus rheumaticus is the cause of acute articular rheumatism. In a recent paper, Cole,[6] quoted by Preble in *Progressive Medicine*, March 1, 1907, says, after a review of the literature, "I greatly fear that we are not yet in a position to make any positive statements as to the etiology of this disease. It seems to me there are at least three possibilities: First, that acute articular rheumatism is a definite specific, infectious disease, the cause of which we do not know, and that the cocci which have been isolated were secondary invaders. Second, that there is no such specific disease as acute articular rheumatism, but that the cases grouped under this term are those of mild and moderately severe cases of general streptococcus infection, in which the joint and heart are generally involved. Third, that acute articular rheumatism is due to a special form of streptococcus, which at present we have no accurate method of distinguishing from the streptococcus pyogenes, but which, owing to the specific character of the lesions induced in a man, must possess special characteristics." Commenting on this, Preble says: "This appears to me a reasonable statement of our knowledge to-day." We thus see that the work of the last five years simply strengthens the probability that acute articular rheumatism is an infectious disease and that the nature of the infectious agent is still a matter of dispute, but that the investigations which point to the micrococcus rheumaticus as the exciting cause are numerous and of such a character as to assume the dignity of an extreme probability.

Symptoms.—The symptoms are such as would naturally result from an infectious disease in which the micrococcus circulates freely in the blood, may find lodgment in and cause inflammatory reaction of almost all structures in the body. If the term rheumatism be used in a broad, comprehensive sense to include all of the manifestations produced in all of these structures, then the difficulty of obtaining a satisfactory nomenclature becomes at once apparent.

The onset may be insidious and accompanied by malaise, irritability, nervousness, anemia, headache, sore throat, fleeting pains in the joints, epistaxis, loss of energy with slight rise of temperature, or it may be sudden with chill, fever, weakness, with severe pains in the joints and marked prostration. The clinical picture varies widely with the mode of onset, the number of joints involved, the severity of the infection, the occurrence of inflammation in structures other than the joints.

The temperature may be 101 to 102, or there may be hyperpyrexia.

The joints are red, inflamed, swollen, very painful and tender. Sweating, with peculiar sour odor may occur, and may be profuse.

The appetite may be very poor, the bowels constipated, the thirst may be great, and there may be marked mental distress with insomnia.

The urine is scanty, high colored, strongly acid, the chlorids diminished, the urates augmented.

The blood is commonly rapidly impoverished and the anemia may be marked or even fatal. The red cells are diminished during the acute stage. A moderate leucocytosis is almost always present and may be a marked increase. The characteristic diplococci may occasionally be demonstrated in the blood, but workers in this field state that this is exceptional and is also difficult. Aside from the common symptoms there may be disease of the nervous system as chorea, cerebral rheumatism and rheumatic spinal lesions; disease of the cardiovascular symptoms, such as carditis, pericarditis, endocarditis, arteritis and phlebitis; there may be disease of the respiratory system, such as tonsillitis, pleurisy, pneumonia, acute pulmonary edema, bronchitis; there may be cutaneous manifestations, erythema, purpura, a scarlatinaform eruption; and there may be symptoms referable to the digestive tract, the genitourinary tract, such as nephritis; and occasionally such manifestations as thyroiditis, mastitis, lymphadenitis, conjunctivitis and iridocyclitis.

3. British Medical Journal 1905, xl, p. 1510.
4. Transactions of the London Pathological Society, vol. lv, p. 126.
5. Transactions Chicago Pathological Society, 1905, vi, p. 303.
6. N. Y. Medical Journal, 1906, p. 334.

PATHOLOGY OF RHEUMATISM.

L. M. Loeb, M.D., Chicago.

In many cases the tonsils show the earliest signs of involvement. The gross and microscopic changes are usually those of the ordinary streptococcus infection. The peritonsillar tissues may also be involved, even to the degree of abscess formation. As has been noted, Meyer, and others with him, believe that the infective agent in all or nearly all cases enters the general circulation through the follicles of the tonsil. Menzer, who removed the tonsils of a number of rheumatic patients, found that streptococci had in three cases entered the blood through the peritonsillar structures.

The degree of joint involvement varies greatly in different cases. Like all of the other lesions due to rheumatism, the inflammatory processes about the joints are ordinarily non-suppurative. The appearance of pus usually indicates either a mistaken diagnosis or a mixed infection. The synovial membrane is greatly thickened by an inflammatory edema—there are collections of round cells and leucocytes and the endothelial cells present a cloudy swelling. Usually all the structures about the joint are the seat of similar inflammatory changes. The subendothelial capillaries are dilated and may rupture; the tissues become invaded by leucocytes, later by fibroblasts, which are in turn replaced by scar tissue. Streptococci are said to be found in large numbers in the subendothelial connective tissue. The fluid in the joint is increased in quantity, but not nearly to the extent to which one might be inclined to believe it. It is not at all unusual to find it impossible to withdraw fluid from a greatly enlarged knee-joint—in few cases is one able to get as much as an ounce. The fluctuation frequently obtained is usually not produced by free fluid, but by the edema of the surrounding structures. The fluid is somewhat less viscid than normal, contains small flakes of fibrin, and is slightly cloudy; microscopically it is found to contain some endothelial cells in a state of fatty degeneration and numerous polymorphonuclear leucocytes. In very malignant cases, pus is said to have been found in the joints. This has been noted particularly in young children. It never is thick, as in abscesses, but the fluid is mucoid or blood stained, and resembles pneumonic sputum. Practically all cultures made from the joints have proven sterile, my own invariably so in cases of rheumatism. Poynton explains the sterility of the joints by the fact that the leucocytes enter simultaneously with the bacteria and destroy them. In protracted cases or after repeated attacks of the same joint, the ligaments may become stretched and the ends of the bones hypertrophied, so that the joints are abnormally mobile and very prominent—this occurs not infrequently in the small joints of the fingers and hands. Very unusual cases have been described, in which the effusion was so large and the ligaments become so flaccid that luxation of the joint resulted.

The heart shows pathologic changes in the majority of instances. There is an acute parenchymatous myocarditis in practically all of the fatal cases, and it is found clinically in many of the others. Fatty degeneration of the heart muscle is characteristic of rheumatism. There are also localized deposits of fibroblasts, which result in the development of connective tissue. A rheumatic infection is the most frequent cause of endocarditis; almost all the endocarditides, non-ulcerative, of young individuals, indicate a preceding rheumatism. The endocarditis may appear in spite of little or no joint involvement. The mitral valves are involved most frequently, the aortic less often, the tricuspid and pulmonary quite rarely. The latter are practically never affected unless those of the left heart show advanced degrees of ulceration. Pure tricuspid and pulmonary valvulitis are extremely rare. Ulcerative endocarditis occurs in a small percentage of cases. When it is present, the endothelial lining is absent, the valves are eroded, and often the eroded surfaces are covered with thrombi, which may extend onto the auricular or ventricular wall. Microscopically the valves show a round cell infiltration and large numbers of strepto- or diplococci. Infarcts are found in the spleen and kidneys, not rarely cerebral emboli. More often the endocardium does not ulcerate. There is either a simple round cell infiltration in the edges

of the valves or the endothelium desquamates and the denuded areas are covered with thrombi, which become organized. The edges of the valves in consequence are thickened and the cusps shortened or adherent to one another. The anatomical changes about the heart are so similar to those of the joints that it has been said that in rheumatism the heart acts like a misplaced joint.

The serous surfaces, pericardium, pleura and peritoneum, are also frequently involved. All of these surfaces, when affected, show a plastic fibrinous or serofibrinous inflammation. Ordinarily the effusion is not large, unless there is an added transudate, consequent upon a cardiac insufficiency of coexisting nephritis. Thickening of the membranes or adhesions between superimposed surfaces usually result. Suppuration of the pericardium has been described, but is certainly a great rarity in rheumatism. Usually the pericardium is affected alone and the pleura and peritoneum involved by extension, if at all. There may, however, be a polyserositis, similar to that produced by the tubercle bacillus and spread through the circulating blood. Then all of the serous surfaces are involved simultaneously. Poynton claims in one such case to have isolated the specific diplococcus. Meningitis occurs rarely; though there are not uncommonly signs of meningeal irritation. The tendons undergo changes similar to those of the joints. There is sometimes permanent thickening and shortening on account of cicatricial infiltration.

The fibrous nodules, which occur in tendons, tendon sheaths, and subcutaneous tissues, at times, have given the type of rheumatism in which they occur the dignity of a special name—rheumatismus nodosus—are of special interest. They are rare in adults, but are said to be very common in children in England. Pediatricians in America do not meet with them so often; in England they appear to be of sufficient frequency to be of diagnostic value. Cheadle, who has studied them most thoroughly, describes three types:

1. Miliary nodules in the tendons and tendon sheaths.

2. A large type, which occurs in tendons, especially of the extensor muscles, where they pass over joints or at their points of insertion.

3. Still larger nodules—as large as a walnut—where the skin lies directly over bone, e. g., over the patella and malleoli. These nodules consist of round cells, which may either disappear or go on in their development to the formation of scar tissue.

The kidneys, liver, spleen and other viscera show the ordinary parenchymatous changes of acute infectious diseases. Fatty degeneration of the kidneys is also very characteristic. Neuritides, even optic neuritis, thromboses of superficial veins (saphenous, external, jugulars, etc.) are among the unusual changes.

The relation of Sydenham's chorea to rheumatism is well known clinically. Almost nothing is known of the pathology of chorea; too much speaks against the theory of multiple emboli to permit us to attach much value to the idea. Changes, such as have been noted about the red nucleus and basal ganglia in cases of Huntingdon's chorea, have not been found. The choreiform movements produced experimentally in England by inoculation of the streptococcus bore little resemblance to the true Sydenham. Within the last two years autopsies of chorea cases have been made, in which it has been claimed that there was pronounced dilatation of the capillaries, whose lumen contained large numbers of streptococci. These have been cultivated from the brain tissues. Similarly the skin diseases, so often associated clinically with symptoms of rheumatism, erythema nodosum and multiforme, have no known pathologic relationship. Cocci of various types have been found in the efflorescences, but there has been no successful attempt to cultivate an organism, whose cultures produced joint changes in animals. Likewise, there is no definite knowledge as to the bacteriologic or pathologic relationship between rheumatism and the hemorrhagic diseases—purpura rheumatica, p. hemorrhagica, or scurvy. It is not probable that they are very closely related, in spite of the fact that the joints show signs of involvement.

The blood shows a moderate polymorphonuclear leucocytosis. Otherwise there are no morphological changes except for a more or less pronounced secondary anemia. Much attention has been given to the chemistry of the blood, but the

only definite changes noted are a diminution of alkalinity, probably on account of the increase of formic and lactic acids. Even this does not appear true of all cases. It has been noted that the cultures of the streptodiplococcus of Triboulet form much acid and that the presence of formic acid was particularly striking. This has been used as an argument for the specificity of the organism. The urine is also highly acid, and formic acid has been found to be eliminated in increased quantity. Walker claims to have found the formic acid in rheumatic urine to be as high as .2 grams per day, while in health, according to von Jaksch, the total amount of all fatty acids does not exceed .05 grams (just one-fourth). The similarity of some of the manifestations of rheumatism to those of gout for many years caused it to be classed among the intoxications. However, if, as is likely, the joint symptoms, and those about the heart especially, are produced by the local action of a pathogenic agent, the metabolic changes become of secondary importance as not causing the disease, but being its products.

To sum up the pathologic changes, we have (1) a streptococcus infection of the tonsils and peritonsillar tissues; (2) an acute non-suppurative inflammation of the synovial membranes and surrounding structures; (3) a fibrinous or serofibrinous inflammation of the serous membranes, the pericardium and pleura being especially often attacked; (4) an ulcerative or more often benign disease of the endocardium and by extension or independently of the myocardium; (5) deposits of round cells in skin, tendons and muscles; (6) perhaps mycotic foci in the brain, producing chorea, meningitis and rheumatic hyperpyrexia.

CHICAGO MEDICAL SOCIETY.

Meeting of Nov. 13, 1907.

A regular meeting was held Nov. 13, 1907, with Dr. Robert T. Gillmore in the chair. Dr. Ralph W. Webster read a paper entitled "Toxemia from the Standpoint of Perverted Metabolism," which was discussed by Drs. Frank X. Walls, Joseph M. Patton, and in closing, by the essayist. Dr. Alex. C. Wiener contributed a paper on "The Treatment of Tuberculous Spondylitis," which was discussed by Dr. Edwin W. Ryerson, Dr. Liston H. Montgomery, and in closing, by the author of the paper. Dr. T. G. Allen followed with a paper on "Proteids in Infant Feeding; the Necessity of a Standard." This paper was discussed by Drs. I. A. Abt, Frank X. Walls, A. C. Cotton, Frank S. Churchill, and the discussion closed by Dr. Allen.

TOXEMIA FROM THE STANDPOINT OF PERVERTED METABOLISM.

RALPH W. WEBSTER, M.D., PH.D., CHICAGO.

(Author's Abstract.)

So uncertain have been the ideas regarding toxemia that it seems advisable to define this term. Toxemia is a condition characterized by the overloading of the blood with normal or abnormal products of food or of tissue metabolism. This condition is, therefore, purely endogenous in character and is sharply separated from those conditions associated with toxic symptoms due to exogenous products, as well as from those toxemic states arising in the course of infectious diseases. Excessive normal or abnormal activity of one organ may so influence the activity of other organs that a toxemia may follow as a result of perverted secondary metabolism. The close relationship or co-ordination of the various tissues of the body has been well treated by Starling in his assumption of the various "hormones."

Accepting then that the toxemia under discussion is endogenous in character, is usually non-bacterial, and is influenced by the inter relations of the many organs of the body, is there any basis for the belief that it is due to perverted metabolism of any organ or group of organs? It is reasonable to suppose, and definite proof can be given, that abnormal activity, that is, perverted metabolism of any organ, would result in the overloading of the blood with products, which may, *per se*, lead to various symptoms of the toxemic type or may so influence the activity of other organs that abnormal relations obtain. Moreover, the activities

of many organs, depending as they do on the presence of certain substances elaborated by other organs and passed by them into the blood stream, are influenced to abnormal activity by their absence due to disease or to perverted metabolism of the co-ordinated organs.

INTESTINAL TOXEMIA.

The activity of the intestinal juices is dependent on the quality and quantity of the food introduced, the quality and quantity of the juices themselves, the power of absorption, and the motility of the intestines. Any abnormality in any of these factors will lead to markedly abnormal decomposition processes. A direct effect upon the intestinal activity is observed after intake of a large amount of food. The digestive powers of the juices are pushed to the limit to take care of the excess, but unless abnormal motility of the bowels is present, this excess can not be handled. We thus observe an effort on the part of the bowel to overcome these effects. Diarrhea, under these conditions, is a conservative process, as without it the digestive juices cease to act, according to the law that an accumulation of the products of activity of an enzyme will retard or prevent further activity. Abnormal conditions of the digestive juices will lead to a lessened digestive, and hence, to a lessened absorptive power of the bowels. Without such conditions food has little energy-value and symptoms of under-nutrition slowly but surely appear.

Toxemia of intestinal origin is due to the absorption of abnormal amounts of normal products or to normal absorption of abnormal products. That the products of normal or abnormal decomposition in the bowel may exert some toxic action on the system is true, but we must not exaggerate these influences. To what extent and under what conditions may normal products of putrefaction and fermentation cause disease? The number of putrefactive products, which occur in the intestine only under pathological conditions and to which any toxic action can be attributed, is remarkably small. Skatol, indol, etc., may cause headache, neuralgia, neurasthenic symptoms, etc., yet symptoms of poisoning are evident only when a larger amount is injected than is formed in very abnormal decomposition. While it is true that abnormal decomposition in the intestines is associated with abnormal products, yet none of these products, so far isolated, have been proven sufficiently toxic to account for the general effects of such disturbances. The results observed following intestinal disorders are much more to be explained by the effects of the abnormal products upon the metabolism of other organs rather than by the direct effects of the products themselves.

HEPATIC TOXEMIA.

It is in the narrow space of the liver cell that we find localized the formation of glycogen from sugar, the conversion of the amido-acids and ammonium compounds into urea, the neutralization of extrinsic toxins, the conjugation of aromatic bodies with sulphuric and glycuronic acids, as well as the storing up of fatty acids and soaps. Any disturbance in any of these functions is promptly felt by the system as a whole. The antitoxic functions of the liver may be comprehended by recognizing a protective action in each of the numerous metabolic indications by which the functional activity of the normal liver cell manifests itself, and by seeing an intoxication in the disturbance of these functions. While it is difficult to say just how far other organs may be functionally influenced by the toxic action arising from the disturbances of the liver, there can be little question that certain toxemic symptoms may be manifested by a disorder in any of the hepatic functions. Normally autolytic processes are going on in the liver cell, which result in the formation of definite products. These are rendered inert by the same liver cell which produces them. In other words, the liver cell is capable of breaking down and resynthesizing its own constituents. These autolytic products are of the acid type and pass into the circulation unmolested, providing the liver is incapable of exerting a sufficient antitoxic effect. Thus arises a condition of acidosis, whose influences are fairly well known. The pathological changes associated with such processes are usually fatty in nature, as evidenced by the fact that in phosphorus poisoning, acute yellow atrophy, and in delayed chloro-

form poisoning, fatty degeneration of the liver is associated with an increased output of amido-acids and acetone bodies.

A second series of changes which give rise to signs of hepatic toxemia are those asociated with disturbances in the conversion of amido-acids, etc., into ammonia, and thence into urea. Here we find an ammoniemia along with irregular autolysis, leading to an increased acid formation either of the amino or oxy series. This condition is quite distinct from that discussed above and has a separate function of the liver to deal with.

Another class of hepatic toxemias is found in a low-grade infection of the gall bladder. I have recently seen, through the courtesy of one of our leading surgeons, a patient who has been treated for 10 months for dilatation of the heart without the slightest effect. On simple drainage of the gall bladder although no symptoms pointed to this organ, the cardiac symptoms became better and, within a few days had almost subsided, the heart being reduced to about normal size. This points to some obscure toxemia with the gall bladder as its source. We all know that the myocardium is extremely sensitive to untoward influences, so that the above assumption does not seem so far-fetched.

We must grant, therefore, that many metabolic perversions of the liver may lead to definite toxemias, although this may not always be manifested by a clear etiology.

RENAL TOXEMIA.

That toxemia of renal origin is unquestioned, is certain, but the cause of such a state in unknown. The theories advanced as to its causation have, for the most part, as a basis the idea of overloading of the blood with urinary constituents as a result of an insufficient kidney. One by one these substances have been abandoned until now we can not grant that any of them is specific in the etiology of this group of symptoms. A thorough inquiry into the localization of these substances and into their toxic action in cases of renal insuffiency is much needed. It will be necessary to ascertain how and to what extent glands, such as the thyroid and suprarenals, react to the intoxication; whether by insufficient or excessive secretion, or by the production or neutralization of the products of metabolism. When we are acquainted with all the factors which probably go to determine the appearance, progress, and prevention of uremia, it will no longer seem strange that it can not be correctly estimated or adequately explained either by the deficit in the metabolic balance or by quantitative analyses of the blood.

THYROID TOXEMIA.

The thyroid is of great importance in the general metabolic activity of the system. Where this organ is lacking, owing to disease or removal, we find a marked lowering of the general energy-relations, while in cases in which its function is exaggerated a great increase in the total consumption of energy is noted. There is no organ, with the possible exception of the working muscle, which exerts such an influence on the energy relations as does the thyroid. It is known that definite signs of toxemia follow both the excessive and deficient action of this gland, the varying result being more quantitative than qualitative.

CONCLUSIONS.

1. Toxemia, aside from that following the acute or chronic bacterial processes, is always of metabolic origin.

2. The toxemias under discussion are more the effects of a general metabolic perversion than of a direct organic disorder.

3. A specific toxemia, in the sense that it is due to a specific substance, is unknown in the class of toxemias treated.

100 State Street.

DISCUSSION ON THE PAPER OF DR. WEBSTER.

Dr. Frank X. Walls:—The paper that we have heard to-night is one that would require a good deal of thought and study before one could fittingly respond to it. However, I believe that the question of general metabolic intoxication has taken such advanced steps in the past few years that we must realize, particu-

larly in the domain of diseases of children, that these toxemias are among the most important and most frequent of the disorders we treat.

About a year ago Dr. Brenneman read a paper before this society on "Over-Feeding," in which he dwelt on the dangers that result from the taking into the body of excessive amounts of foods, and we find in children particularly that the disorders that formerly were considered to be intestinal are now considered to be by many, and those many the better thinkers in the profession, disorders that are not disorders of the alimentary tract, but diseases due to a perversion of metabolism. That the common enteric disturbances, so-called, that we meet with daily, are due to disturbances within the economy of the child rather than within the intestinal tube, I believe marks one of the greatest advances that has been made, particularly from a clinical and practical point of view. We meet with these conditions so commonly.

A child is taken more or less suddenly ill—at least, in the eyes of the family—with a high fever; with more or less disturbance of the alimentary tract; with signs of acute intoxication, which has been up to now considered as intestinal, and treated from a purely intestinal basis. If clinically we consider this case—and these are common cases—from another point of view, from the point of view of a disturbance of metabolism, and treat the child with a view of disintoxicating it, we will find that in almost every one of these cases the disturbance is entirely a metabolic one, in that our results, if the disturbance is not from the beginning a fatal one, will show that this disintoxication can be brought about by considering metabolism, so far as we know of these changes occurring in the infant. The greatest advance we have recently made in clinical medicine has been the appreciation of the rôle played by metabolic disturbances in causing intoxication.

Dr. Joseph M. Patton:—The importance of toxemias in clinical medicine has grown steadily in the last few years, but I think we sometimes realize inadequately the rôle that these toxemias play in very many conditions. A great difficulty is the inability of physiologic chemistry to identify any of these toxins with any specific form of disease. Why it is that in one instance of kidney trouble we have toxic degeneration of the myocardium, with its consequent physical changes, and in another case apparently of the same grade we find these changes are entirely absent, is one of the things we are entirely unable to explain. The fact that these degenerations of the myocardium do not entail lesions which are not curable in every case, shows that they must be due to some fault in metabolism. We see cases in which an extensive dilatation of the heart will occur rapidly consequent on a nephritic toxemia apparently, and yet under proper treatment such a condition will absolutely disappear, and that heart will go on for years without any particular trouble. So we also find that arrhythmic disturbances of the circulation, due in some cases to intestinal and in others to nephritic toxemias, are readily amenable to empirical medication. I say empirical because we do not understand the nature of these toxins. Again, in connection with toxic states due to disturbance of liver functions, we find rhythmic and dynamic variations of the circulation, which will respond to medication tended to stimulate the function of the liver. In this fact we find the philosophy of the statement of the old English physician who said he had given to a cardiac patient, in twenty years, ten thousand grains of blue mass, and with great benefit.

If we get away from the idea of specific forms of medication for definite varieties of toxemia, and base our therapeutics on perversion of metabolism as suggested by Dr. Webster, we will be likely to attain some measure of success in the treatment of these conditions.

Dr. Webster (closing):—I have not a great deal more to add to the paper I have read, other than to remark that it would seem, on the basis of the conclusions drawn in the paper, namely, that there is no such thing as a specific toxemia, to be useless to attempt specific treatment for any of the cases of the various toxemias treated in the paper. The general line of treatment would be, as Dr. Patton has mentioned, more or less purely eliminative and symptomatic,

leaving out entirely a specific kind of treatment which has been followed in many of these cases. This latter treatment seems to yield less reliable results than the former.

CONTRIBUTION TO THE TREATMENT OF SPONDYLITIS TUBERCULOSA.

ALEX. C. WIENER, M.D., CHICAGO.

Professor of Surgery, Illinois Postgraduate Medical School; Attending Surgeon West Side Hospital.

The following case was instrumental in originating a new method for successful treatment of tuberculous spondylitis involving the second, third and fourth dorsal vertebræ with pronounced deformity.

History.—Mrs. A. E., married, 54 years of age, had two children who were stillborn at full term, owing to the mother's very contracted pelvis. Had never had any venereal disease nor typhoid fever. Fifteen years ago she suffered a thrust in the back from the pole of a wagon. Within one year her back became gradually deformed. At the same time she was seized with attacks of asthma and rheumatic pains radiating from the back toward the neck and head. Three years of suffering gone by, she was supplied with a Taylor brace. After one year she was practically free from pain, and she enjoyed good health until in 1903 she passed through an attack of influenza. Since that time she was troubled with pains of a neuralgic nature, which emanated from the upper part of the back and ran down and up the spine into the shoulders and the neck. When first seen she described these pains as sharp and cutting, coming on suddenly, like lightning, which lasted a few minutes at the time. In April, 1906, I saw her in consultation with Dr. Peter Latz, in whose diagnosis of tuberculous spondylitis I concurred. The patient was in bed and could not move about without assistance. In December, 1906, I saw her again.

Status Præsens.—Short, stout woman, with an expression of great suffering and anxiety in her face. Pulse about 90, weak and irregular; temperature 100° (F.) in the forenoon. Length of body, 4 feet 10 inches; circumference of chest, 35 inches; of abdomen, 37 inches. Heart sounds normal; no arteriosclerosis. Stomach pendulous. Lungs apparently normal. Loud bronchial râles over both lungs. Deep and superficial lymph glands of the neck, palpable. Pott's deformity, as above stated. Liver enlarged, lower edge reaching down to below the umbilicus. Right kidney also palpable. Colon distended, ascending colon packed with feces. Gases felt rolling beneath palpating hand. Lower edge of ribs almost touches the crest of ilium. Both feet and legs edematous. Feet in spastic equinus position. Clonic contractions of both feet and legs every once in a while, which lasted a few minutes and caused agony.

The outlook for the recovery of this sufferer certainly was gloomy. Authority to follow there was none. For the text-books agree upon the hopelessness of just such situations. Any extension brace which has its abutment at the crest of the iliac bones would have been of no benefit. The fastening of a jurymast by a plaster-of-Paris cast was also not to be considered, owing to the figure and internal derangements of the patient. Here I may be permitted to emphasize the great attention to be paid to the mental attitude of this class of patients. The majority are intellectual, highly sensitive, self-conscious, and very suspicious individuals. Any contrivance which renders their affliction as conspicuous as a jurymast does is abhorred from the start. I have, therefore, dispensed with this medieval apparatus long since. The jurymast deserves to be banished into the museum of obsolete surgical instruments. I trust that adoption of my trolley extension will cut off the last fathom of the jurymast's existence.

The indications in this case were clear enough. First, the spastic reflex contraction of the muscles of the neck had to be permanently counteracted. This would have served two objects: (a) In relieving the pain; (b) in assuring better arterial and lymphatic circulation. Thus the local pachymeningitis as well as the edema of the cord, which are the forerunners of transverse myelitis, are effectually relieved. Second, the affection of the bronchi, of the liver, and the

patient's generally debilitated condition made physical exercise imperative. Third, the despondency over her helplessness and pains was daily growing, and something had to be done at once to occupy her mind and to inspire her with new hope.

There was no departure from principles generally accepted in my plan of treatment. Weight extension applied at the head is the only means of meeting all demands. But instead of making the pulley stationary, I mounted it on a trolley wire, so as to enable the patient to exercise while the weight was doing its work. Copper wire proved to be too elastic. So a steel wire was stretched through two rooms. On this ran two pulleys, twenty inches apart, which were connected by steel bars. In the same cases in which the upper pulleys were running, pulleys of the same circumference were fastened. Over this ran the rope on which the weight for the extension was suspended. This arrangement protects the patient from being hit by the swinging weight. The patient, in moving forward, moves the weight along, and the spine is permanently stretched, whether he moves about or sits down.

In this case, the legs being paralyzed, the patient, at first, had to be supported on both sides. The legs lagging behind were moved forward by the legs of the attendants. The result was astonishing. In two weeks the patient could take long steps herself without assistance. In three months she was able to walk on two canes, free from the trolley, and she is, since June, six months after the commencement of the treatment, able to enjoy outdoor life. Her general health has gained accordingly; the cough has ceased; the liver is decidedly smaller, yet she is still very excitable and nervous. She was not able to stand the strain of being presented to the Chicago Medical Society.

The trolley extension is not to be compared with other remedies where so often the truism is in order, *post hoc, ergo propter hoc*, or one swallow does not make the summer. From the nature of the affliction and the almost immediate relief that was found with the employment of the trolley extension, it is evident that similar cases must yield to the same treatment. In cases of fracture of the spine the trolley extension must be of value too, and ought to be employed wherever danger of transverse myelitis and decubitus exists.

Weir Mitchell and Motschukowsky, the eminent Russian neurologist, recommend weight extension in locomotor ataxia. Not every patient afflicted with tabes can afford to employ the Fraenkel method of exercise for recovery of coordination. Neither much time nor money is required to exercise with the weight extension, which ought to be regulated by the demands of the patient, ranging between five to twelve pounds. In this instance a great number of observations will have to be made in order to prove the value of the method as an adjunct in the treatment of locomotor ataxia.

DISCUSSION ON THE PAPER OF DR. WIENER.

Dr. Edwin W. Ryerson:—Tuberculosis of the spine in the upper dorsal region is so severe, so intractable a disease, that anything which will help us along, even a little, is certainly to be very much desired. It seems to me this is one of the most ingenious things I have seen for a good while. It is something new. I shall certainly try it the next opportunity I have. I have at present in my wards at the Cook County Hospital several adults with high dorsal Pott's disease, and I shall rig up an apparatus of this sort for those cases. It is a fact that these cases of paraplegia from Pott's disease tend in general to get well under favorable circumstances. It has been proven, beyond question, by the work of Goldthwait, and by the futile, abortive, and yet significant efforts of our old friend, Dr. Calot, in forcibly correcting these spines, that by overcorrection of the deformity the tendency is for marked improvement of the paralysis to take place. I have seen some fifteen or twenty cases of paraplegia, mainly in children, where for weeks and months, and in one or two cases for years, complete paraplegia has existed, and yet after placing the patient on one of the Goldthwait-Metzger apparatuses, the patient lying on the back, with the weight of the body forming countertraction to bend down this knuckle (illustrating), almost immediate return of some motion and sensation took place. Sensation, however, is not frequently dis-

turbed in these cases. I remember a boy, who was paralyzed for eight months, yet who, ten hours after we had put on this apparatus, began to move his toes, which had been paralyzed for eighteen months. This is the only one of a number of cases. We cannot do that in high dorsal Pott's disease with any degree of ease, because we cannot hold these people by any form of apparatus that has yet been invented, except perhaps slowly by recumbency in bed. We can rig up Sayre's jurymast, and Goldthwait's head supports, but we cannot produce any reasonable traction on the spine. We cannot get a sufficient grip on the pelvis to actually extend the spine on itself; but by weight and pulley such as this, we can in these high dorsal cases, where there is not so much compensatory or normal curve to be pulled out, produce a certain amount of extension, and this trolley apparatus is admirably suited for it.

The greatest difficulty in the realm of orthopedic surgery is in the upper dorsal Pott's cases. I have never succeeded in keeping any case from getting worse unless the patient is kept in bed on a curved Bradford frame for a long period of time. I have never seen any ambulatory brace or apparatus designed which would prevent these cases from getting worse. We can put on a plaster-of-Paris jacket, which will remove some of the weight, but in a child whose pelvis is illy formed, or an adult whose abdomen is pendulous, as in Dr. Wiener's case, suitable counter-extension cannot be obtained. The bed treatment is of the first importance, and it is impossible to obtain proper bed treatment in many cases, so I see a distinct future for this trolley method.

Dr. Liston H. Montgomery:—I would like to ask Dr. Wiener what, if any, constitutional treatment he gives in these cases?

Dr. Wiener:—I did not use tuberculin injections. An effort was made, however, to keep the bowels of the patient open by enema and suitable cathartics.

As to the difference between children and adults, the superior recuperative power of children versus adults is no more graphically illustrated than in tuberculosis of the bones. We know that children, as Dr. Ryerson has pointed out, will recover the use of their limbs after complete paralysis within two years. This can be shown in 83 per cent. of the cases, and what is going on is well demonstrated in many cases. The paralysis is not produced by pressure of the bones on the spinal cord, but the result of pachymeningitis, myelitis, and an edema within the substance of the spinal cord. Sometimes in these cases iodid of potash is an admirable remedy, but the best and most immediate relief comes from extension. This extension, however, is not to be applied in such a way that the child cannot breathe. It must have a chance to take in plenty of oxygen, and, furthermore, the child should enjoy an outdoor life, irrespectively of the season of the year.

Tuberculosis of any kind is intrinsically a non-hospital disease. These patients should be taken out of the hospital as quick as possible.

Weir Mitchell and Motschukowsky, the famous Russian neurologist, have advocated, in tabes dorsalis, permanent weight extension in a chair, particularly in cases where the ataxis is pronounced. I would be pleased to hear from any neurologist who has employed in hospital cases this apparatus as an experiment. It can be procured at but a small outlay.

PROTEID IN INFANT FEEDING; THE NECESSITY OF A STANDARD, AND AN ATTEMPT TO ESTABLISH ONE.

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(Author's Abstract.)

For many years proteid has been considered the most difficultly digestible constituent of milk and the most frequent cause of trouble in the artificial feeding of infants. It is now known that babies can digest skim milk (i. e. proteid), with comparative ease, often without dilution, so that this view of the difficult digestibility of proteids is rapidly changing among students of infant feeding, though the profession in general still hold to the older view. The fat of cow's milk is now considered by many pediatrists to be the offending element,

at least as often as the proteid. As it becomes better understood that babies are frequently less tolerant of the fats than of the proteids it seems likely that many will go to as unreasonable lengths in their fear of the fats as we used to go in our fear of the proteids. Just as fear of the proteids led to the giving of too little proteid so the fear of fat may lead to the giving of too little fat and as a necessary consequence too much proteid. To show how to avoid the giving of either too much or too little proteid is the main purpose of this paper.

The various methods of modifying the proteids of cow's milk had the effect of lessening the daily quantity below the normal amount required for growth and development. An examination of the schedules in most books on infant feeding will show that the amount of proteid prescribed during the first three or four months is as little (often less) proportionately as the adult requirement. This ought not to be, for the growing baby requires proportionately more proteid than the adult who has ceased to grow.

The dilution of milk with the idea of causing the curd to form in smaller particles would do no harm did we take the precaution to control the total quantity of whole milk given in the day, for instance, if a child requires .40 ounce of proteid in 24 hours the important thing is that it gets 10 ounces of a 4 per cent. proteid milk; whether this is fed in a 20 ounce, 30 ounce, or 40 ounce mixture is of far less importance. The dilution will depend on the infant's digestive ability. As nothing else can take the place of proteid in promoting the nutrition and repair of the active cells of the body it is plain that an insufficient supply of proteid must result in inadequate blood, muscle and bone, general failure of nutrition and lack of resistance to disease.

The fact that children may apparently thrive and gain in weight on a low proteid diet has often misled us into being satisfied with an insufficient proteid intake until too late we realize that damage has been done. To my mind, therefore, nothing is so important for the physician to rid his mind of as this fear of giving too much proteid, and nothing more important for him to acquire than the habit of asking himself, how much proteid is the baby getting daily? How much should he get?

Seldom is too much proteid fed in early infancy but it is very common to see infants over seven or eight months old fed three or four times as much proportionately as would be proper for an adult. While the objection to excess of proteid is not nearly so serious as to deficient proteid, yet the amount of unnecessary work thrown on the liver and kidneys must in time prove a serious handicap. How shall we avoid giving too little or too much proteid? By keeping within the limits of a minimum and maximum daily standard.

There are at least three ways in which to approach this problem of fixing a standard.

1. Determine the proteid excreted in the urine on a proteid-free diet. This represents the amount of proteid which must be ingested to maintain proteid equilibrium. Feed this quantity of proteid and then keep increasing the quantity until the excreted proteid begins to increase. The difference between the intake and the outgo is the amount needed for growth. The total per pound of the baby's weight is the amount needed to make good the waste and allow for growth.

2. If we may assume the proteid standard for an adult man at moderate work is about 2.5 to 3 per cent. of an ounce for each pound of his weight, and that the energy standard per pound for such a man is 18 to 22 calories or the eqivalent of 15 to 19 per cent. of an ounce of sugar, it will be seen that the proteid is about 1/6 of the total food, which is the proper proportion for an adult. Now if we further assume that the energy standard for a baby should be nearly twice that for a man, say 35 to 45 calories, and that the proteid in mother's milk is about 1/9 of the total solids estimated as carbohydrates, then 1/9 of the energy, 4 to 5 calories, should be obtained from the proteid, that is the proteid standard should be 3.5 to 4.3 per cent. of an ounce for each pound of the baby's weight and about 40 per cent. greater than the standard for an adult.

3. The study of a number of cases, in which the daily proteid consumed per pound by babies nursing their mothers has been carefully observed for months, gives us a proteid quotient of between 4 and 5 per cent. of an ounce. These results are, of course, not equally valuable, but by checking one method with another I have arrived at the conclusion that the minimum daily proteid quotient should be 3.5 to 4 per cent. of an ounce and that the maximum daily proteid quotient should be 5 to 6 per cent. of an ounce.

SIMPLE AND PRACTICAL APPLICATION.

One ounce of good milk containing 3.5 to 4 per cent. fat contains also about 3.5 to 4 per cent. of proteid, and an ounce and a half of this milk would contain 5 to 6 hundredths of an ounce of proteid. Since these are our minimum and maximum standards we may say that one ounce of milk in the day for each pound of the baby's weight is the minimum quantity for continuous feeding and that an ounce and a half of milk should be the maximum for continuous feeding.

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DISCUSSION ON THE PAPER OF DR. ALLEN.

Dr. I. A. Abt:—I was very glad to hear this very thoughtful and instructive paper. So far as these proteid values are concerned, I am not able to express an opinion on them because I have not carried on the work far enough. As I read the various reports from different parts of the world on infant feeding, it seems to me that we are going through an evolutionary period. Different men are still working in different directions. In this city, for example, some of us are still working along the line of the chemical analysis of milk and the percentage system of feeding. Others are working more along the lines of methods that are used on the continent.

So far as proteid feeding is concerned, quite a revolution has been brought about by the teaching of Czerny and Keller. They express the belief that the proteid causes no harm; that the fat produces nearly all the ill effects which are produced by feeding of cow's milk. They are the ones who in a chapter of their book, speak of the ill effects produced by proteid food, but if they had written that chapter fifteen years ago they would have been compelled to say that great harm was done by proteid feeding. To-day they are able to say that little or no damage is done by this food. But whether that is strictly true or not, it is difficult to say. At least, I am not prepared to say. Inasmuch as Virchow has said that every physiological type has a pathological prototype, it is a question whether some damage may not be done by proteid feeding. Hamburger, of Vienna, working along this line, says that damage need not be done to the intestinal tract or to the intestines themselves, but the combining of the proteids and the proteid molecule with the cell may cause metabolic disturbance. But Czerny and Keller say no, that it is impossible, and they quote from their chapter and say that the proteids do absolutely no harm. Working along the same line, Finkelstein refers to alimentary intoxication or intestinal intoxication. A more recent work, from observers in Munich, attempts to solve the problem in a unique way. They attempt to solve the whole problem of the disturbance of infantile nutrition underlying Ehrlich's side-chain theory. They have worked out an interesting and readable proposition. They begin by saying that Ehrlich once said that the workings of the immunity problem were to be compared to some of the metabolic processes which go on within the body. Then they go on to show that the intracellular metabolism is the important thing in the nutrition of the baby, in the diseases of the baby, and in the appropriation of the food of the baby. They say, as Dr. Walls referred to earlier in the evening, it is not what goes on so much in the intestinal tract, but what goes on with the metabolism within the cell. The cell does not bind the molecule, nor the proteid molecule, or the proteid molecule does not get into the cell by a process of diffusion, but it occurs in a sort of tropholytic process, comparing it to the hemolytic and bacteriologic processes, using the terms that are employed in speaking of Ehrlich's side-chain theory. In our nutrition we must have a receptor and complement, and the complement is taken up or ap-

propriated by the receptor. All this refers to the internal metabolism, and the appropriation of the food by the cell in the appropriate process.

The work of Moreau attempts to show that an infant that is fed by milk of the same species, that is, by homologous food or homologous proteid, thrives much better. It gains more in weight. If the infant be well, for instance, for the first few days, and then fails, very soon the serum complement rises and remains equally as great as the serum complement of a healthy adult.

Dr. Frank X. Walls:—This subject is one of the most interesting that can be brought before us, and I think Dr. Allen has done well to call our attention to the fact that only too often are children given too little proteid. There is certainly need for considerable proteid during the building time of life, and just what amount of proteid a child should have I do not know. This metabolic work is so difficult to carry out that I have never done any of it, but have followed much of the work that has recently been published. I believe that part of his paper should be emphasized, wherein it is pointed out that in many feedings too little proteid is administered to the child. It should be remembered that the proteid is the only element of milk that must be given to the child; that any other element in the milk, speaking now of food elements, might be left out of the milk, and its part replaced by one of the other elements of food, at least, for a long time, without any special injury to the child. Proteid must be given to the child if we would nourish it properly. Dr. Allen is right in emphasizing the point that when the child has not received a sufficient amount of proteid it is weakened in its resistance against disease. It does not follow, however, as he said, that a child who is not given proteid enough does not gain on the scales. Very frequently they do. The point should be emphasized that the food which may cause an increase in weight is not necessarily a good food. When Dr. Allen, however, tells us that there is a limit to the amount of proteid, and places it at a definite figure, I am not willing to go quite that far.

He mentioned gastrointestinal troubles, troubles with digestion and putrefaction. I think the reverse of what he has stated can be demonstrated; that the administration of large amounts of proteid tends to prevent the decomposition of food within the alimentary tract; that the administration of large amounts of proteid does not give rise to any of the clinical manifestations of indigestion. And that statement has not originated with anyone here. It is one that has been made by the authorities to which Dr. Abt has referred several times, and among them Czerny, Keller, Escherich and others. Most of the German writers on this subject are in accord with that statement, and say they have not had pointed out to them as yet any evidence of trouble from the administration of proteid in cow's milk. The troubles that arise from the excessive administration of proteids in adults is another question. Proteids given to adults, rich in purin bodies, have had supposedly a relation to gout, to diseases of an arthritic nature, but this does not hold, so far as it has been shown, with the proteid that is present in cow's milk. It has not been shown that there is danger from the use of large amounts of the proteid of cow's milk. On the other hand a diet of proteid alone cannot be given in large enough amounts to supply a child with heat and energy, as well as provide for its nitrogenous waste and cell growth. Skimmed milk, which is a proteid rich food, if given for any length of time, is not a proper food for a child. It is a harmless food, however, and it is the latter part of Dr. Allen's paper to which I would take some exception. On the whole, however, I would commend the paper very heartily, particularly that part of it in which he says we give too little of this valuable article of food.

Dr. A. C. Cotton:—I hardly thought of taking part in this discussion, but while listening to the paper and those who have discussed it, some thoughts have occurred to me.

First, we are all under obligations to the essayist for presenting this very important subject. Whatever way a feeder goes about his calculations in his study of the constituents of food must be valuable. I think, without exception, that all

experienced baby feeders to-day realize that the tendency in the recent past has been to ignore or undervalue proteids in the dietary.

Dr. Allen has presented the idea not only to writers and teachers, but to the profession at large who treat babies, that fats are known as a frequent cause of digestive disturbances, and that the teachings of two decades ago, that a paucity of fat led to certain nutritional disorders, principally rickets, had induced too heavy fat feeding in babies to the detriment of the digestive processes. The proteids were frequently blamed for indigestion, which proved, on closer observation, to be due largely to the fats of cow's milk, for many reasons well-known to the most of us, abnormal to the baby's digestive requirements.

In discussing baby feeding, we are too apt to forget that there are two questions for consideration. One is the nutritional feeding of infants, and the other the therapeutic feeding. Whether the theory presented by the essayist as to the amount of proteids that a baby of certain weight should receive is a sound one or not, I will say that the physician is confronted with the problem daily of how to feed a baby anything and keep it alive. Unfortunately, at this stage of development of the relation of the medical profession to the laity, the physician is not given charge of healthy babies, of normal babies, and it is the disordered infant that is brought to the physician, and he must study each problem, each individual case, separately. No rules of physiology that have been laid down will meet the requirements of all these pathological cases.

In regard to the feeding of proteids, the need for which is evident to all who feed babies, I will say that a year and a half ago in a paper presented before the Pediatric Section of the American Medical Association, I advocated the method of high proteid feeding, a method of inducing toleration of proteids, and Dr. Wentworth of Boston raised the question of the evil results of high proteid feeding. His criticism was very just at the time. It induced me to observe more carefully the effects of high proteid feeding, and I must say that I have not seen any ill effects from it. As has been stated by one of the previous speakers, if there are any effects they do not appear in the development of the child, and so far as we can estimate, from any metabolic processes, in the infant, there is no ill effect from excessive proteid feeding. There is positive evidence, however, on all sides of harm from giving a paucity of proteids.

As to high proteid feeding, some of the feeders have kept it up in spite of the tendency of the past two decades to reduce the proteids, to make tolerant the digestion of cow's milk. A noted pediatrician in Paris has fed whole milk in his clinic for more than twenty years, and he believes that if the milk is not diluted by such a thing as water, the gastric secretions will take care of the cow's milk.

Dr. Frank S. Churchill:—We are all much indebted to Dr. Allen for his interesting paper, and study of this most interesting subject.

There are one or two questions I would like to ask Dr. Allen. First, with regard to Chart No. 10, from how many babies are those averages made up, or from how many babies were the conclusions drawn? Second, with regard to Chart No. 6, I understood him to say that the proteid quotient of 8/100 was too high. Why too high? What is the standard?

With regard to what Dr. Allen said about anemic babies, and it being due to a low proteid diet, I cannot agree with him. I do not see how anyone who sees a large number of infants at dispensaries can make such a statement, because the babies who come to our dispensary clinics get, as a rule, a pretty high percentage of proteids. The usual home method of diluting milk is that of equal parts of milk and water. While the milk the children get is thus poor in fat, the proteid is well up, 1½ to 2 per cent., yet how anemic and in what poor shape these children are when they come to us! It does not seem to me that their condition can be due to a low per cent. of proteid.

Another point that has not been touched on sufficiently in connection with the feeding of these infants is the weight. The more one sees of babies under any method of feeding, the more important does he think it to watch their weight, the most important single factor we have as a guide. But even weight should not

be taken by itself, but the whole general condition of the baby should be watched, and be a guide to us in the amount that we shall feed it, not only the amount in percentages, but the total amount in twenty-four hours. I still feed babies on percentage lines, and to me the American method of feeding by percentages is simpler than is the feeding by calories. I do not think it is right to imply that American observers do not pay attention to the total amount that is fed infants in twenty-four hours. They do; they regulate the total number of feedings, also the amount which they feed at each feeding, that amount varying with the different ages, and having been determined from an enormous amount of clinical experience, and from anatomical studies of the size of the stomach at different ages.

Dr. Allen (closing the discussion):—With reference to the questions asked by Dr. Churchill, regarding the charts, I will say that in Chart 10, which shows the daily proteid, the weight of the baby and the proteid quotient obtained by dividing the daily proteid by the weight, the figures are the average results obtained in the study of eight cases, all healthy infants, and nursed by their mothers. The amount of milk was determined by weighing the infant before and after every nursing during the entire period of observation, which in one case was 9 weeks, in another 11 weeks, and in all the others 20 weeks or longer.

In Chart 5, where I have shown that the baby was getting 8/100 of an ounce of proteid for every pound of its weight, i. e., the proteid quotient was 8, Dr. Churchill asks why I consider that too much. First, without taking my work into consideration, but comparing this proteid quotient with the only standard we have had heretofore, viz., that for an adult, we find that this baby was being fed between 2 and 3 times as much as the adult requirement. A liberal allowance for an adult is 2.5 to 3 hundredths of an ounce, so that after making an ample addition to this, say 50 per cent., to allow for growth, 8/100 of an ounce for a baby seems unreasonably high.

Second.—As I have tried to show, all the proteid ingested above 4/100 or 5/100 of an ounce to the pound can not be utilized like the 4/100-5/100, but must be oxidized like the sugar to produce heat and energy.

Now we know that proteids are not easily oxidized, so that instead of getting urea, as we do when a proper amount of proteid is fed, we are apt to obtain large quantities of oxidation products intermediate between proteids and urea when a large excess of proteid is fed, and their abundance may interfere with their complete excretion. In short, metabolism is interfered with and the abnormal, incompletely oxidized proteids circulating in the blood and tissues bring about a state of things either analogous to or constituting a toxemia.

While it is true that all anemic infants are not fed on a low proteid diet, it is also true that all low proteid fed infants are anemic, so that perhaps we are all agreed on this point.

With regard to the tendency to feed too little proteid we seem to be pretty well agreed. With regard to feeding too much proteid I expected you would not all agree with me, because I know you are aware of the European opinions in regard to this, but I must say they have never appealed to me. I have always felt that there is a limit beyond which it is dangerous to feed proteids, that just as we may have babies gaining in weight with too little proteid and do not see the injurious effects until late, so we may not see the harm in feeding large quantities of proteid until some time has elapsed. While I may not have satisfactorily proven this, as Dr. Walls suggests, I am convinced that some of the toxemias I see are due to these incompletely oxidized proteids.

Owing to the fact that we rarely find only one of the solids of the milk, fat, proteid or sugar, fed for a considerable length of time, we are unable to determine which is the cause of the toxemia, but I have seen cases in which the proteids were the probable cause.

I am free to say that I believe most children will tolerate an excess of proteid alone as well as an excess of either carbohydrate or fat alone, but I should like to have you make observations on the effect of a high proteid with a low non-nitrogenous diet. But whether we are agreed that there is a limit to the tolerance of

proteid or not we know that there is a limit to the quantity that can be used to advantage and that any more than this is a disadvantage. The important thing I should like to leave as clear as possible is that I have tried to establish another simple standard in infant feeding, a standard more important, I believe, than the energy standard and far easier of application.

Meeting of Nov. 20, 1907.

A joint meeting of the Chicago Medical Examiners' Association and the Chicago Medical Society was held Nov. 20, 1907, with Dr. J. Allen Patton in the chair. Dr. Geo. W. Webster read a paper on "Cardiac Inefficiency," which was discussed by Drs. L. H. Montgomery, W. K. Harrison, E. L. Hayford, J. Allen Patton, Geo. W. Hall, and Dr. Webster, in closing. Dr. E. Fletcher Ingals read a paper on the "Diagnosis of Infections of the Lower Respiratory Tract," and Dr. Bertram Sippy read a paper on "The Significance of Hyperchlorhydria." Dr. Sippy's paper was discussed by Drs. Mack, Portis and Moore.

DISCUSSION ON DR. WEBSTER'S PAPER.*

Dr. Liston H. Montgomery:—As Dr. Webster has covered the ground pretty thoroughly, there is little to add to what he has said. However, we all recognize that many of the essential features of a life insurance examination are determined before the application reaches us. We inquire of the applicant if he is addicted to alcohol, the use of narcotics or tobacco, and how much, or whether he has suffered from any disease whatever bearing on his subsequent health, and we ascertain many other things that the writer referred to. We must know beforehand whether the applicant has had jaundice, bronchitis, gallstones or influenza or any other disease; then we auscultate the heart and organs of respiration. If we were to examine the applicant and try to ascertain all the details mentioned by Dr. Webster, the examination in some instances might last all day. Experience and practice guide us in physical diagnosis, as well as the field of the medical examiner, and we close our medical examination by making a careful urinalysis of the individual or applicant.

Dr. W. K. Harrison:—I wish that this paper might be placed in the hands of all medical examiners for life insurance. I am certain that in many cases the routine examination of the heart does not reveal its true condition, and that, in the majority of papers, we have a true report of the conditions present. A review of the mortality records of insurance companies and societies will confirm this statement. The examinations are too superficial. It is performed in a perfunctory way, without realizing the gravity of the verdict to be based on the report.

Dr. E. L. Hayford:—Dr. Webster has given us a most excellent résumé, and I heartily agree with him. I believe it would be money well expended by the insurance companies if such an article as this could be placed in the hands of every medical examiner. I believe I have not had many instances of weak heart escape me, but I am sure that there are many such cases and that they continue to live, notwithstanding our failure to recognize them. I am sure that most ordinary conditions are recognized, but many examiners are careless in carrying out such a method as Dr. Webster referred to and, therefore, often fail to detect these inefficient hearts.

This paper ought to have a far-reaching influence among men who are responsible for recommending or declining applicants for insurance.

Dr. J. Allen Patton:—This paper is of value, especially in cases where a physical examination is essential. The routine examination of the heart is not carried out as it should be and perhaps many cases of inefficient heart are passed in an ordinary examination.

Dr. Geo. W. Hall:—If by the term inefficient heart Dr. Webster means an incompetent heart, I should think that the medical examiner would not be called upon once in a thousand times to examine such a case. For in such a condition

* For text of the paper see page 134.

the general appearance of the patient would be sufficient to warn the examiner of the possible conditions present. I believe that considerable stress should be placed on the character of the pulse in making such an examination of the heart, as it is frequently a good guide to some heart lesions previous to auscultation.

Dr. Webster (closing the discussion):—I am not a life insurance examiner and did not know, as stated by Dr. Montgomery, that the agent makes the inquiries for you regarding the patient's antecedents and personal history. If that is the case, I do not see the necessity for an examiner to do this. The examiner should be familiar with the cases which do and may lead up to the breaking down of the heart. A murmur may not be present; the dangerous hearts are murmurless, but that heart may be working up to the limit.

I spoke of the pulse in the paper, but the important point is that you should not merely be able to recognize the condition of the heart by the pulse, but you must be in a position to recognize in the body those conditions which are going to influence the heart and perhaps take the man's life. The heart may at the time be doing good work, but you ought to be able to read the "handwriting on the wall" and be familiar with all the conditions that may lead to inefficient heart. If you only want to know the condition of the heart at the time of the examination, you are like the ostrich hiding its head in the sand. You must know not only the condition of the heart at the time, but also know what it will be in the future.

DISCUSSION ON DR. SIPPY'S PAPER.

Dr. M. H. Mack:—There is probably no disease of the stomach which is more confused than hyperchlorhydria. The condition generally reacts quickly to dietetic treatment, but the majority of physicians deem it necessary to use much medicine. I follow the treatment outlined in the majority of cases, and the result usually is pleasing, coming on in about 4 to 6 weeks. Occasionally I find an obstinate case, but such cases are uncommon. Constipation is a very frequent complication in these cases. I do not use cathartics of any kind under such conditions, but obtain relief by the use of colonic lavage.

It is not unusual to have a patient suffering from a marked degree of hyperchlorhydria and then at the first examination of the stomach contents, after a test meal, fail to find any acid present. The mental effect produced by the use of the stomach tube is the cause of this absence. Repeated tests will reveal the true conditions. I use very little medicine, a little bicarbonate of soda; that is all. The dietetic treatment outlined in the paper will give the best results.

Dr. M. M. Portis:—The ordinary hyperchlorhydria will resolve itself, but unfortunately a number of these cases are accompanied by hypersecretion. The fasting stomach contents examined in the morning will show 50 to 120 c.c. of highly acid fluid. Such cases may or may not show the clinical manifestations of ulcer. The work of Pawlow indicates that no special excitants of the gastric juice occur. He found that milk, meat, potato and various vegetables do not excite a greater per cent. of gastric juice any more than similar quantities of water would. The only exception noted was meat extracts.

Experiments I have made in the past five months have shown me that vegetables of different types, especially spinach, carrots and potato, cause as great a per cent. of secretion as do meat and milk, but, whereas meat will cause secretion to continue for 6 to 8 hours, a similar amount of vegetables will cause secretion to continue for 1 to 3 hours. In the selection of a diet it would seem wise to emphasize the choice of foods that decrease the time of secretion rather than one selected with reference to stimulation. Of course, the patient will complain of more pain when he is fed on a vegetable diet than he would on an albumin diet, but it is better to suffer a little pain while the stomach is secreting if the duration of secretion could be decreased. The acidity can be controlled, in part, by the administration of bicarbonate of soda, which also has a checking influence on the amount of secretion of hydrochloric acid.

The giving of fats is, I think, important. Fleiner found that giving a little oil not only relieved the patient of pain, but it also decreased the amount of

secretion of hydrochloric acid. In the work on dogs it has been found that, whereas free HCl after feeding would begin in from 5 to 6 minutes, if fats were given also HCl would begin only after 20 to 30 minutes. Cream and butter fats operate in the same way.

Dr. E. R. Moore:—I wish to emphasize the importance of giving a vegetable diet. The giving of meat induces the formation of hydrochloric acid. We have had this experience in our clinic over and over again.

CHAMPAIGN COUNTY.

The Champaign County Medical Society held its regular monthly meeting in the parlors of the Hotel Beardsley, Jan. 9, 1908, at 1:30 p. m. Meeting was called to order by Dr. J. S. Mason, President. The program was as follows: "Ocular Manifestations of Extraocular Diseases," Dr. H. V. Wilson; "Irregular Types of Pneumonia, with Report of a Case," Dr. D. E. Yantis. The papers presented were well written and brought out a very full discussion. After the reading and discussion of papers the society adopted resolutions commending Governor Deneen's idea of establishing a state sanitarium for the treatment of tuberculosis, also the new methods introduced in the treatment of the insane. An agreement also was made with the J. F. Burnham Hospital to turn over to the hospital all the fees, both medical and surgical, received from the county for the treatment of paupers.

CHRISTIAN COUNTY.

The Christian County Medical Society held its semi-annual meeting in the County Court room in Taylorville, Jan. 16, 1908. The meeting was largely a business meeting, there being only three papers read. The first by Dr. T. A. Lawler on the "Phenylhydrazin Test for Sugar." The doctor compared this test with others and showed the peculiar crystallization under the microscope. Dr. A. F. Turner read a very interesting paper, "From Miracle to Medicine." Dr. Wm. T. Bridges, of Stonington, read an excellent paper on Puerperal Eclampsia. The newly elected officers are: President, Dr. J. H. Dickerson, Taylorville; vice-president, Dr. C. L. Carroll, Taylorville; secretary-treasurer, Dr. D. D. Barr, Taylorville. Alternate delegate (to serve one year with Dr. Jesse P. Simpson, of Palmer), Dr. A. F. Taylor, Taylorville. Censors, Drs. J. N. Nelms, Taylorville; Wm. T. Bridges, Stonington; Jesse P. Simpson, Palmer. Medicolegal committee, Dr. C. L. Carroll. Committee on program and scientific work, the president and secretary, aided by Dr. Jesse P. Simpson; Arch I. Gibson, Morrisonville; Albert Field, Stonington; Campbell A. Stokes, Edinburg; F. J. Eberspacher, Pana. New members elected to the society, Dr. Oliver L. Crow, Assumption; Dr. J. F. Hall, Assumption; Dr. N. Allen Crouch, Assumption; Dr. Roscoe C. Danford, Pana; Dr. Albert Field, Stonington; Dr. G. W. Milligan, Edinburg; Dr. Raymond E. Holben, Mt. Auburn. We now have 41 members out of the 50 practicing physicians of the county.

CLARK COUNTY.

The Clark County Medical Society met in L. J. Weir's office at 2 p. m. Members present: Drs. Bradley, Prewett, Burnsides, Johnson, Mitchell, S. W. Weir, Rynearson, Smith, Ryerson, L. J. Weir; visitors, Drs. A. S. Phelps and C. R. Phelps. The following resolutions were unanimously adopted:

Resolved, That we are in favor of providing an endowment for the scientific study of the criminal, pauper and defective classes, with a view to lessening social evils, by investigation of their causes.

Resolved, further, That copies of this resolution be sent to our representatives both in our state legislature and in congress.

Reports of Cases.—L. J. Weir reported a case of mitral regurgitation, in which the usual treatment has not relieved the man in the least. Infusion of digitalis and nitrate of potash was suggested. Dr. Johnson reported a case where, in the

latter weeks of pregnancy, the amniotic fluid escaped gradually and finally the child was born and lived; also reported a case of exophthalmic goiter. Dr. Burnsides reported an interesting obstetrical case, in which a mole was finally discharged and case recovered. Several practical suggestions were offered in the discussion of these cases.

Dr. L. A. Burnsides read an interesting paper on venereal diseases, discussing gonorrhea, cause, symptoms and treatment, and dwelling on treatment in detail; then syphilis was considered systematically. The essayist thought gonorrhea caused more distress than all other contagious diseases combined, and suggested the regulation of prostitution. The paper was well received and discussed thoroughly, the treatment receiving the most attention. Injections in gonorrhea were advised by most all, one being careful not to carry gonococci to the posterior urethra by having patient sit on folded towel so as to secure pressure on urethra. Mild antiseptic solutions in the beginning and astringents late in the course of the disease. A few are using irrigation. All employ medicine by mouth, acetate of potash or other alkalies. Some use cubebs, copaiba, etc.

In the treatment of syphilis the size of the dose of mercury and iodid of potash was considered to be very important. It should be small enough and large enough to control the disease. The early treatment was properly emphasized to prevent the late and serious sequelæ. The points made in the discussion were practical and valuable. The interest taken was intense, continuing the meeting until after dark.

The Program Committee suggested subjects for a few meetings in advance, which, after discussion, it was considered best to accept the subject of obstetrics to be presented by Dr. Prewett for the next meeting, and at that time to consider other subjects. Therapeutics was thought by some to be of enough importance for a year's study. Upon motion and second it was unanimously voted to have a banquet at the next, which is the annual, meeting.

CRAWFORD COUNTY.

The Crawford County Medical Society met in regular session at the Carnegie Library in Robinson, Jan. 9, 1908, at 1:30 p. m., with the vice-president, Dr. A. L. Lowe in the chair. The following members were present: Drs. Frank Dunham, I. L. Firebaugh, C. E. Price, A. G. Meserve, LeRoy Newlin, A. L. Lowe and H. N. Rafferty of Robinson, C. H. Voorheis and J. B. Cato of Hutsonville, and J. A. Ikemire of Palestine. The address of the afternoon was by Dr. C. E. Price on The Acute Diseases of the Respiratory Tract. The subject was presented in a very clear and forceful manner and elicited quite a general discussion. Dr. I. L. Firebaugh exhibited a convalescent case of gonorrheal ophthalmia in a babe of three weeks, in which no prophylactic measures had been used, but which had responded nicely to active treatment.

EDWARDS COUNTY.

A regular meeting was held Oct. 15, 1907, at Albion. Cases were reported by Drs. H. L. Schaefer, of West Salem, and J. S. Williams, of Albion, and papers on Typhoid were read by Drs. Bing, of Browns, and Buxton. Dr. L. J. McCormack, of Bone Gap, was elected secretary.

DIFFERENTIAL DIAGNOSIS OF TYPHOID AND MALARIAL FEVERS.

W. E. Buxton, M.D., Albion, Ill.

Typhoid fever, enteric fever, eruptive fever and I may say classical fever, is a specific disease from specific typhoid bacilli, taken into the system from various sources of infection, germinated and fostered from Peyer's glands, and runs a determinate course, with a few well-defined and pathognomonic symptoms. When once fortified behind the congested and swollen follicular breastworks of Peyer, it can seldom be aborted. Whether coyly caressing or in dead earnest about his business, it usually gets in about 18 to 30 days in all places and at all times of

the year; has withstood bombardment through the dark ages of the black-coated tongue and sordes with the tympanitic drum-like abdomen, has resented all kinds of destructive warfare and, finally, when gentleness and coaxing came upon the scene with its modest means and cooling, sanitary influence, the flag of defiance was lowered. Hence a modified typhoid fever for the past few years.

Malarial fever is a separate and distinct, as well as a specific, disease, with no relation to other fevers, although it may co-exist in the same individual at the same time. Its periodicity stamps it as independent. It is due to a germ that is air-borne, and enters possibly by inoculation. Never fails to make itself at home, and it is known when it comes. Can be aborted and is subject to control by medicines if taken in time. But a loss of time will give it opportunity to associate itself with an unfriendly rival: "a hybrid, a mongrel bastard," pardon this homely expression, but I have coined the name hybrid as a product of the joint causes of typhoid and malarial fevers, and may be properly styled or called typho-malarial fever, continued fever, slow fever or a typical fever. While it may claim kinship to typhoid and malarial fever, still it is an independent and has no legal right to relationship.

It has often, and to the injury of the patient, been mistaken for these fevers, and of late years I believe it the most common idiopathic fever known to us; like the poor, it is always with us. It is equally at home in an epidemic of typhoid or malarial fever. If we treat it as typhoid we certainly will be disappointed as to results. If we treat it as malarial and get in our calomels and quinin in regular style, we will possibly be called on to face our own mistake later in the form of intestinal hemorrhage. It appears sometimes in a mild sporadic form, here and there a case, or, like a tornado of destruction, it swoops down on a family or a town or a neighborhood, leaving death in its path, as has been my misfortune to see at different times.

In modern typhoid fever we find our patients in somewhat the condition of man's plan of salvation. The symptoms, the plans are not all alike, they are not in notation nor do they follow in order; symptoms, like muscles and nerves, have no names written upon them; they must be located. In typhoid the patient is nervous, shaky voice and a little overtoned, with a peculiar odor from his breath, or will soon develop, that is pathognomonic to the trained diagnostician; for several days loss of energy and appetite; first day temperature 99, pulse 75 to 100, headache, mind dull and apathetic, surface uniformly warm, abdomen swollen, tympanites, iliac tenderness, and gurgling, diarrhea and a peculiar bad odor; ochre discharges with flocculent or white specks floating in it; tongue has white fur and trembling, subsultus tendinum, delirium, intestinal hemorrhage late and in convalescence. Nose bleed, urine has traces of albumin, course and duration typical; one attack usually gives immunity to a second attack; can not be aborted.

Malarial Fever.—Occasion abrupt chill, first day temperature 103 to 106. Pulse 100 to 120. Periodical, abdomen tumid, surface temperature uniform, no tympanites, no gurgling, no iliac tenderness, thick yellow fur on tongue, no trembling, urine scant and yellowish red, course and duration subject to treatment; one attack predisposes to another; intestinal hemorrhage very rare, nose bleed rare, quinin a specific, may be intermittent or remittent. Such is my experience with true typhoid and true malarial fever, and let me, in conclusion, diagnose this hybrid or atypical fever, which I am persuaded to believe, and my experience has impressed me to the opinion, is the fever that most of us diagnose and treat as typhoid.

The accession abrupt. No loss of vitality in a forming stage, rarely a chill. First day's temperature 102 to 105, pulse 120, mind clear to the very last, extremities cool, abdomen hot, no tympanites, no iliac tenderness, no gurgling, the belly wall is rather flat or flabby, constipation, tongue changed but little and no trembling, possibly a yellow fur, no delirium, no subsultus, no nose bleed, intestinal hemorrhage as early as the second week, no albumin in urine, course and duration uncertain and atypical, may run with a morning remission and after-

noon temperature of 103 for 30 days. May have this fever several times, can be aborted; intestinal antiseptics, sulpho carbolates, passiflora, and sedatives with castor oil is almost a specific in connection with the tepid bathings and the wet pack to the bowels.

EFFINGHAM COUNTY.

Effingham County Medical Society met Dec. 10, 1907, and elected for the year 1908 the following officers: George Housmesser, president, Shumway; first vice-president, C. M. Doty, Edgewood; second vice-president, M. E. Kepner, Laclede; secretary, C. F. Burkhardt, Effingham; treasurer, I. W. Goodell, Effingham; board of censors, J. N. Matthews, Maroa; J. H. Walker, Effingham; C. F. Burkhardt, Effingham; G. M. Baker, Altamont; T. J. Dunn, Dieterich; delegate, C. M. Doty, Edgewood; member of the medical defense committee, T. J. Dunn, Dieterich.

FULTON COUNTY.

The forty-first meeting of the Fulton County Medical Society met in the Churchill House in Canton, December 3, and in the absence of President Blackstone and Vice-President Cluts, Dr. Sutton was called to the chair.

The following resolution, presented at the October meeting, was on motion of Drs. Connelly and Blackburn, adopted as Sec. 7, Art. 5 of the Constitution:

Resolved, That it is the sense of the Fulton County Medical Society that any member entering into contract work either medical or surgical for a less price than that prevailing in the community in which the contract is made shall be deemed not in good standing in the society.

PAPERS.

"The Surgical Diseases Caused by Pneumonia," S. C. Stremmel, Macomb. "Etiology and Pathology of La Grippe, Pleurisy and Pneumonia," F. C. Robb. "Treatment of Pneumonia, La Grippe and Pleurisy," S. A. Oren. "Complication and Sequelæ of Pneumonia, La Grippe and Pleurisy," P. H. Stoops. "Tonsillitis," H. H. Rogers (read by the secretary). "Bronchitis," T. C. Hays. Active discussion followed.

We have had many good meetings, but this one without question was the most interesting and profitable in the history of the society. Drs. Shallenberger and Stoops moved a vote of thanks to Dr. Stremmel that was unanimously adopted. A communication from the ILLINOIS MEDICAL JOURNAL was read. Those present were: Sutton, Blackburn, Shallenberger, Robb, Hays, Connelly, Ray, S. A. Oren, Stoops, Fleming, Chapin, Ewan, Regan, Simmons, Zeigler and S. C. Stremmel of Macomb.

D. S. RAY, Secretary.

GALLATIN COUNTY.

The first quarterly meeting of the Gallatin County Medical Society met in Masonic Hall, Ridgeway, Jan. 8, 1908, with the president, Dr. Riley, in the chair. Dr. Combs read a very valuable paper on "Erysipelas," giving his experience with this disease during his practice of nearly fifty years. This paper was discussed by all present. "Medical Ethics," by Dr. Riley, was well presented. Dr. W. W. Collins, Junction, and Dr. E. A. Greene, Ridgway, were elected members of this society. On motion, Drs. Sherman, Capel and Bowling were appointed as a committee to draft resolutions in regard to patent and proprietary medicines. Dr. Combs was elected a member of the judicicial committee. The following officers were elected for the ensuing year: President, Dr. Paul Sherman, Shawneetown; vice-president, Dr. Geo. W. Combs, Ridgway; secretary and treasurer, Dr. A. B. Capel, Shawneetown. Meeting adjourned to meet at Shawneetown on the afternoon and evening of April 8, 1908.

LAWRENCE COUNTY.

The Lawrence County Medical Society held its annual meeting in the City Council Chamber at Lawrenceville, Ill., Monday, December 2, with the following members present: Drs. B. F. Hockman, W. M. Friend, O. M. Turner, A. G. Mountz, C. J. Sprinkell, H. V. Lewis, R. R. Trueblood and Charles P. Gore. Dr. A. G. Mountz of Chauncey read a very interesting paper on Bronchopneumonia. Some valuable and instructive points were brought out in Dr. Mountz's paper. This paper was ably discussed by the members present, each citing cases of their own, giving the treatment and management of each individual case, showing that each case presents its own peculiar problems, and calling forth the best judgment and skill of the physician. Dr. O. M. Turner of Sumner read a valuable paper on "Pneumonia in Children." The doctor's paper was full of practical points told in a practical way. Dr. B. F. Hockman lead the discussion, followed by H. V. Lewis and others. The next subject on the program was a symposium on Typhoid Fever, to be led by Dr. J. B. Bryant of Lawrenceville, but owing to the absence of Dr. Bryant the subject was discussed in general by all present.

This being the annual meeting of the society, the following officers were elected for the year 1908: Dr. H. V. Lewis, president; Dr. W. M. Friend, vice-president; Dr. Charles P. Gore, secretary and treasurer; Dr. C. J. Sprinkell, censor for period of three years. An important feature of the day was a banquet given to its members by the society, and served by the ladies of the Christian Church of this city, at the home of Mrs. J. D. Horner. Dr. A. G. Mountz of Chauncey was toastmaster, and Drs. Sprinkell, Hockman, Lewis, Trueblood and Gore responded to toasts. Although not as many were present as at other meetings, all claimed this the most practical and valuable meeting of the year.

MADISON COUNTY.

The Madison County Medical Society met at the rooms of the Alton Commercial Club on Dec. 6, 1907, at 7:30 p. m., President T. P. Yerkes in the chair. Members present: Drs. Everett, H. R. Lemen, Fisher, Yerkes, Robinson, Ihne, Johnson, Sutter, Smith, Zoller, Merritt, Foulds, Taphorn, Hastings, J. H. Fiegenbaum, Ferguson, Beard, Luster, Binney, Shaff, Cook, Joesting, Ralph B. Scott and E. W. Fiegenbaum. Visitors: Drs. Carl E. Black of Jacksonville; Schuessler, Duggan and Porter, of Alton; Gibberson, of Upper Alton; Merwin, of Highland; Engel of Prairietown; and Mr. McGailliard, of Granite City. The reports of the secretary and treasurer were read and referred to auditing committee, who reported them correct, when on motion, they were approved and ordered filed. The following applications for membership were read and referred to board of censors: Drs. J. Morgan Sims, Charles R. Oatman, John W. Siegel, M. W. Harrison and Lay G. Burroughs of Collinsville; B. F. King, W. Purviance, H. C. Earley and W. F. Grayson, of Granite City; J. J. Brown and Chas. E. Molden, of Troy; L. F. Schuessler and D. F. Duggan, of Alton; J. E. Lee and John Lee Marder, of Venice; C. E. Harnsberger, of Alhambra; John A. Collins, of St. Jacobs; Edgar G. Merwin, of Highland; John R. Farthing, of Marine; E. Anthony Everett, of Grantfork; L. L. Yerkes, of Upper Alton; Charles E. Dorr, of Worden; J. S. Thrailkill, of Bethalto; L. C. Harlan, of Madison; Chas. M. Pence, of East Alton; and Edward Engel, of Prairietown. Upon favorable report by the board all of the above were elected to membership, a suspension of the rules having been ordered for that purpose.

The election of officers for the ensuing year resulted as follows: President, Waldo Fisher, Alton; vice-president, H. R. Lemen, Alton; secretary, E. W. Fiegenbaum, Edwardsville; treasurer, J. H. Fiegenbaum, Alton; member of board of censors, to serve three years, W. W. Everett, Highland.

Our district councilor, Dr. Carl E. Black, of Jacksonville, delivered a very comprehensive address on "Surgical Dressings," which was illustrated by photographs and other exhibits, and commanded marked attention, and called out a

very liberal discussion. A vote of thanks was tendered Dr. Black for his entertaining and instructive address. On motion it was ordered that we meet in Edwardsville on the first Friday in March, 1908.

E. W. FIEGENBAUM, Secretary.

MASON COUNTY.

The Mason County Medical Society met in Havana, January 6. The session was held in the K. of P. Hall. Ten members were present and listened to an interesting address on Smallpox, by Dr. George T. Palmer of Springfield. This topic was very timely, because of the large number of cases of this disease in Mason County at that time. The importance of vaccination was fully demonstrated.

MASSAC COUNTY.

Massac County Medical Society met at the city hall at 10 a. m., with the President, Dr. M. H. Trovillion, presiding. Present: Drs. H. C. Fisher, A. C. Ragsdale, J. A. Orr, M. H. Trovillion, C. E. Trovillion, G. W. Walbright, A. E. Miller, W. S. Dixon, P. S. Walters, and J. D. Young. Dr. Ragsdale read a communication from the medicolegal committee of the state society in answer to a communication of his for information. Hon. Fred R. Young was elected attorney for the society and, being present, gave a short talk, thanking the society for the honor and expressing pleasure in having the privilege of association with the society. He was also made an honorary member. The committee on arrangements made its report:

"We, your committee, beg leave to report as follows: Assignment of subjects for a postgraduate scientific study for the next six months: Dr. A. E. Adkins, Diseases of the Nervous System; Dr. W. S. Dixon, Diseases of Children; Dr. S. D. Elmore, Diseases of Women; Dr. H. C. Fisher, General Practice of Medicine; Dr. R. H. Jacobs, Physiology; Dr. A. E. Miller, Genitourinary Diseases; Dr. A. T. Mobley, Experience in the Practice of Medicine; Dr. J. A. Orr, Hygiene and Sanitation; Dr. A. C. Ragsdale, Eye, Ear, Nose and Throat; Dr. C. E. Trovillion, Practical Anatomy, Dislocations and Fractures; Dr. M. H. Trovillion, Obstetrics and Diseases of Children; Dr. C. E. Tucker, Materia Medica and Therapeutics; Dr. G. W. Walbright, General Operative Surgery and Surgical Diagnosis; Dr. P. S. Waters, Physical Diagnosis; Dr. J. D. Young, History of Medicine; Hon. Fred R. Young, Forensic Medicine. Each to have the privilege to write, lecture or demonstrate upon the subject assigned to him. The time allowed each not to exceed 15 minutes in opening and 5 minutes in closing, and each member 5 minutes in discussion. The time to be extended only by vote of the society. We further report that we have arranged for a dinner for all the doctors of the county and their wives at the Julian Hotel at 12 m.

R. H. JACOBS,
M. H. TROVILLION,
G. W. WALBRIGHT,
Committee.

On motion the above report was received and the committee discharged. Hon. F. R. Young, being present, was called to the floor and gave a very interesting lecture on forensic medicine, and mentioned many things of interest to the profession along the line of expert testimony and malpractice suits. Just prior to this lecture the members proceeded in a body to the Julian Hotel, where their ladies were in waiting, and proceeded to do ample justice to the bountiful repast placed before them.

Upon assembling at the city hall, the annual election was declared in order, and the following were elected for the year: Dr. J. A. Orr, president; Dr. A. E. Miller, vice-president; Dr. A. C. Ragsdale, secretary; Dr. C. E. Trovillion, treas-

urer. The following committees were appointed: Executive, G. W. Walbright, A. E. Miller and C. E. Trovillion; censors, M. H. Trovillion, W. S. Dixon and P. S. Waters.

The President then proceeded to call upon the essayists in alphabetical order, and the following responded: Dr. W. S. Dixon presented the subject of worms in children, and stated, beginning with the next meeting, he would present his subject in a systematic form. His lecture on worms was instructive and brought out a rather lively discussion. Dr. H. R. Jacobs next presented a clinic. An old colored gentleman who had been circumcised for phymosis resulting from disease of the glans penis. After examination it was pretty well agreed that the diagnosis was an epithelioma, and an early amputation advised. Dr. A. C. Ragsdale next took up his subject by giving a description of the orbits from an anatomical and physiological standpoint. The subject was favorably commented upon by Drs. J. D. Young and G. W. Walbright. Dr. C. E. Trovillion began his subject by a lecture on the spine and description of the vertebræ and their relation to important internal organs. This lecture was commented upon very favorably.

The time now growing late and other essayists being absent, the scientific work was closed for the day. All present expressed pleasure at the improvement in the program, and amid enthusiasm the society adjourned to meet again on the second Thursday of each succeeding month at the city hall.

M'LEAN COUNTY.

The December meeting of the McLean County Medical Society was held in the city hall on the evening of Dec. 5, 1907. The meeting was called to order by the President, Dr. Godfrey. Communications were read from Dr. McCormack, Secretary of the Kentucky State Medical Society, concerning "The Doctor Versus the Nostrum," and from Dr. Baxter, assistant editor of the ILLINOIS MEDICAL JOURNAL, relative to the advertising matter which appears in the JOURNAL. A letter of appreciation was read from Mrs. Samuel Bane. A motion was made by Dr. Vandervort that these communications be received and placed on file. Seconded and carried. A motion was made by Dr. J. B. Taylor that, in case of a new member joining the society after one-half of the year has passed, the Secretary be instructed to collect from such member the amount required for state dues for six months, or $1.75, plus one-half the local dues for the year, or 50 cents, making a total of $2.25 for six months. This motion was seconded and carried. The following bills were allowed:

Nov. 13, 1907, to stenographic paper	.10
Nov. 23, 1907, to stamps	1.00
Dec. 2, 1907, to 100 postals, notices December meeting	1.00
July 13, 1907, to E. W. Weis, dues for 29 members	71.00
Aug. 23, 1907, to E. W. Weis, dues for 10 members	26.50
Nov. 16, 1907, to E. W. Weis, dues for 29 members	75.00
Total	$174.60

Dr. E. Mammen was essayist of the evening.*

The following members were present: Godfrey, Mammen, Covington, Keys, Hart, J. B. Taylor, J. L. Yolton, R. G. Yolton, Cantrell, Lee Smith, Welch, Sloan, Dobson, Vandervort, and Rhodes.

January Meeting.

The January meeting of the McLean County Medical Society was held in the council chamber of the city hall on Thursday evening, Jan. 2, 1908, at 7:30 p. m. The meeting was called to order by the President, Dr. Godfrey. The censors reported favorably on the names of Dr. Frank C. Fisher, Bloomington, and Dr. T. F. Tannus, Bloomington, who were immediately voted into the society. The name of Dr. O. M. Thompson, of Downs, was proposed for membership and re-

* For text of the paper see p. 152.

ferred to the Board of Censors. A card of thanks was read from Mrs. Covey for the floral tribute sent for Dr. J. E. Covey. A communication was read from Arthur McDonald, of Washington, D. C., relative to the establishment of laboratories under state, federal and city government and also private endowment for scientific study of the criminal, pauper and defective classes, with a view to lessening social evils by investigation of their causes. Dr. J. B. Taylor made a motion that the Secretary frame a resolution directed along the line of the above communication and present same to the society at the next meeting. Motion seconded and carried. A motion was made, seconded and carried that certain alleged irregularities (which were discussed at some length before the society) be referred to the Board of Censors for investigation. The remainder of the evening was very profitably and interestingly passed in discussing the topics assigned for the quiz, this being the third of the year. Those present were: Drs. Bath, Sloan, J. L. Yolton, Welch, Rogers, Dobson, J. B. Taylor, Fenelon, R. D. Fox, Hart, A. L. Fox, R. A. Noble, W. B. Wakefield, C. M. Noble, Lee Smith, Shinn, Vandervort, Howell, J. W. Smith, Godfrey, and Rhodes.

Meeting adjourned.

F. H. GODFREY, President.
O. M. RHODES, Secretary.

MONROE COUNTY.

A special meeting of the Monroe County Medical Society was held at Burksville, Dec. 9, 1907, with the president, D. H. Heidelberg, in the chair, Dr. Adelsberger, secretary, and nine members present. Drs. Bransford Lewis, A. H. Meisenbach, of St. Louis, and C. G. Smith, of Red Bud, were the visitors present. Action on the communication of Dr. A. T. McCormack, secretary Kentucky State Medical Association, relative to resolutions condemning nostrums, was postponed until the Illinois State Medical Society acts thereon. The following resolution was unanimously adopted:

Resolved, That the members of the Monroe County Medical Society, in complying with the rules of the society adopting a fee of not less than $5 for examination of applicants for old line life insurance companies, shall not accept any part of said fee from the agent, but must insist on the company paying the entire fee.

Dr. L. Adelsberger was elected an auxiliary member of the society to the committee on Medical Legislation of the Illinois State Medical Society. The president and secretary were authorized to act with full powers of the secretary on all matters arising in the interim of meetings. The communication of Dr. Baxter asking that the advertisers in the ILLINOIS MEDICAL JOURNAL be given "a square deal" was read and favorable comments made thereon.

Dr. Bransford Lewis, of St. Louis, president of the Mississippi Valley Medical Association, 1906, exhibited models of various European and American cystoscopes, and in connection with the demonstration of his universal cystoscope. Among other things, he said: That the cystoscope had cleared the field of urological diagnosis in many material respects. It had dissipated the cloud of doubt that had hung about the origin, in the urinary tract, of pain, pus and blood, tubercle bacilli, and other organisms and microbic infections; had made clear the reason for abnormal frequency of urination, of difficulty or of impossibility in individual cases; it had proved an ally of inestimable value in the detection and location, at various parts of the urinary tract, of tumors, calculi and foreign bodies. Taking the objects and uses of ureter catheterization alone, aside from the other features of cystoscopy, and it gave a list that was surprising. Quoting from a previous paper on the subject, it was shown that the purposes were two-fold, for diagnosis and for treatment; and these were related in detail. The cystoscope, which the author demonstrated, fulfilled several different objects, and was therefor named the "universal." Its objects were as follows: To afford, (1) a direct, forward view; (2), right angle view; (3), retrospective view; (4) ureter catheterization by the direct method; (5), a means of supplying free irrigation and prompt exchange of the distending fluid during cystoscopic manipulations, to

maintain a clear field of vision. Through the one sheath that was introduced into the bladder, easy and immediate exchange of one telescope was made for another, of different view or object, without disturbing the patient or without his knowing any exchange was being made. All manipulations were carried out under local, if any, anesthesia. Such work was commonly carried out in the office, the patient going thence to his work or usual duties. The technic of the use of the instrument was described briefly. Pathological specimens and other evidences of the utility of the instrument were exhibited, in the shape of prostates, foreign bodies, etc.

Dr. A. H. Meisenback, of St. Louis, presented a large number of pathological specimens demonstrating the importance of early diagnosis and operation in diseases of the abdomen and pelvis. After adjournment the society and its visitors were entertained at dinner by Dr. A. F. Schellschmidt and his estimable wife.

PIKE COUNTY.

A meeting was called on Dec. 9, 1907, of the Pike County Medical Society, to attend the funeral of Dr. F. Marion Crane, president of the society, who died at his home in Pittsfield, Dec. 6, 1907. The following members were present: J. H. Barber, H. T. Duffield, J. Estill Miller, L. S. Lacy, R. H. Main, B. B. Dunn, J. E. Melton, S. B. Peacock, J. Smith Thomas and P. H. Dechow. Visitor, Dr. J. W. Turner, of Louisiana, Mo. The following members were admitted: P. H. Dechow, Kinderhook; W. O. Skinner and Thomas M. Watson, Griggsville; Loran E. Orr and H. C. Sperry, of Hall; Fred S. Gay, Rockford; and Russell P. Wells, of Pleasant Hill. The following resolutions were adopted by the society:

WHEREAS, Divine Providence, in His infinite wisdom, has removed from among us our colleague, Dr. F. Marion Crane; therefore, be it

Resolved, By the Pike County Medical Society, that by his death the society has lost an esteemed member, the medical profession an honored and worthy coadjutor, and the community an exemplary citizen; and,

Resolved, That the members of this society extend to the bereaved wife and family our sincere and heartfelt sympathy.

The members of the society repaired in a body to the late residence of Dr. Crane, and then dispersed.

RANDOLPH COUNTY.

The Randolph County Medical Society met in regular quarterly session at Menard, in the Penitentiary Chapel, January 14. Warden J. B. Smith delivered an address of welcome, which was responded to on the part of the society by former senator Dr. A. L. Brands. Twelve physicians responded to roll call and 4 new members were elected: A. L. Brands, Prairie du Rocher; H. S. Church, Modoc; C. H. Anderson, Menard; W. C. Fowler, Menard. Dr. J. M. Ball operated upon a 15-year-old girl for convergent strabismus. Dr. A. H. Meisenbach removed a necrosed rib from a young colored man. Necrosis being due to tuberculosis. One hour's time was devoted to the discussion of hyoscin-morphin anesthesia, the discussion being especially interesting as to the value of cactin. Those who had used cactin declared that there is no therapeutic effect to be derived from the drug whatever, unless, possibly by giving it for a number of days in succession, there may be some virtue to be derived.

ROCK ISLAND COUNTY.

The Rock Island County Medical Society met at the Hotel Harms, Rock Island, Tuesday, Dec. 10, 1907, at 6:30 p. m. After dinner, in the absence of the president and vice-president, Dr. E. M. Sala was elected temporary chairman. The scientific program was taken up as follows: Dr. G. L. Eyster gave a report of large ovarian cyst, complicating pregnancy. This paper was discussed by Drs.

Hollowbush, Sala and G. G. Craig, Jr. Dr. E. M. Sala then reported two cases in which the use of the ambulatory splint had been successful. Dr. R. S. J. Meyer then followed with a paper on "The Shunt Current Controller for Static Machines and X-Ray Coils," which was discussed by several members. The name of Dr. F. O. Ruignell of Moline was voted upon and he was unanimously elected to membership. It was moved and carried that the following resolutions be adopted and that copies of the same with names of all the members of the county society attached, be sent to the governor, to our state senator, to our representatives, and to the committee of the state society.

WHEREAS, The results of open-air treatment of tuberculosis have been the most curative of any treatment thus far known, and it being a fact that there is little or no provision made for the care of the poor, nor of those in moderate circumstances who are now, or who are liable hereafter to become afflicted with the much dreaded disease in this state; and,

WHEREAS, It is utterly impossible for this, or any other community in the state to make a respectable fight against the disease under such conditions; and,

WHEREAS, The poor and those of moderate circumstances are compelled to remain at home and endanger the lives of their relatives and mankind generally; therefore, let it be

Resolved, That it is the sense of this society that the legislature be waited upon, and that a united effort be made to provide a suitable colony for those of our people who are so unfortunate as to contract tuberculosis.

Resolved, further, That such an institution provide not only for the poor, but also for those of moderate means who can not afford a stay at an expensive colony.

S. B. HALL, M.D., President.
W. D. SNIVELY, M.D., Secretary.

The names of all the members, sixty-two in number, were also signed.

THE SHUNT CURRENT CONTROLLER FOR STATIC MACHINES AND RUMPKORF COILS IN ELECTRO-THERAPEUTIC AND X-RAY WORK.*

R. C. J. MEYER, M.D., MOLINE, ILL.

The problem of controlling the current from a static machine as applied to the patient is a condition to be met by all operators of static machines. The usual method is to control the output of the machine by controlling the speed of the plates. This can easily be done where a direct current can be had by the use of a rheostat to control the speed of the motor, or where the water motor is used, by the control of the water used in the motor. But where the alternating current is in use, the problem is a little more difficult, and various speed controllers have been devised with varied success.

THE SHUNT METHOD OF CONTROL.

I have been using a very simple method for controlling the current for over 2 years, which has given me every satisfaction. This is as follows: Remove the ball ends of the discharge rods, now insert a flat disc about 2 inches in diameter with a projection in center of disc, to fit into end of discharge rods, or sharp-pointed rod (the sharper the better) into end of discharge rods; connect your machine as desired; now bring ends of discharge rods together, start your machine (your current is now shunted through discharge rods); now draw out your discharge rods until the desired amount of current is passing to the patient. Again, after inserting disc or sharp points in end of discharge rods, draw the discharge rods far apart, start your machine, and now by bringing the points or discs closer together you shunt a certain amount of current through the discharge rods until the patient is receiving no more current than is desired. The air space between the discharge rods gives you the resistance. These points or discs are not used, however, when Leyden jar currents are used. Then the balls are used for the same purpose and in the same way as the points or discs.

IN X-RAY.

Again, insert your sharp points as before, bring discharge rods with pointed ends together, connect your tube to the spark gap or stand, start your machine,

* Read before the Rock Island County Medical Society.

and when in full motion gradually separate discharge points until tube lights up properly; then allow the points to remain at this distance to protect your tubes. You can in this way operate the cheapest tubes with maximum results. In operating my coil I use the same pointed discharge rods, with points together, then separate the points until the tube lights up as before. This will also give you an indication as to whether your tube is hard or soft and its penetrating power by its appearance and the distance of the points.

I would recommend the discs in therapeutic work and the points (the sharper the better) in *x*-ray work or where ozone generation is desired for the patient. When the disc is used, polarity is indicated by purple on the edge of the positive and light points on negative disc.

SANGAMON COUNTY.

Meeting of Nov. 11, 1907.

At the regular meeting of the Sangamon County Medical Society, held at the Leland Hotel, evening of Nov. 11, 1907, the following officers were elected for the ensuing year: Dr. C. M. Bowcock, president; Dr. R. I. Bullard, vice-president; Dr. H. H. Tuttle, secretary-treasurer; censors, Drs. O. B. Babcock, C. D. Wright, G. T. Palmer. At the conclusion of the business meeting 94 members and guests were entertained at a banquet, after which Dr. Hugh T. Patrick of Chicago delivered an address on Differential Diagnosis Between Functional and Organic Diseases of the Nervous System. He was followed by Dr. W. L. Baum of Chicago and president of the State Medical Society on Practical Points in Infectious Diseases. A resolution urging the members present to use every effort to prevent the passage of Senate Bill No. 581 and House Bill No. 914 in the Illinois Legislature. Adjournment.

Meeting of Dec. 9, 1907.

At the regular meeting of the Sangamon County Medical Society, held at the Illinois Country Club, evening of Dec. 9, 1907, the following members were in attendance: Drs. A. E. Prince, R. I. Bullard, W. E. Mayes, C. P. Colby, D. W. Deal, A. L. Brittin, Paul Wakefield, Stanley Castle, H. A. Aschauer, A. L. Hagler, P. L. Taylor, C. S. Nelson, C. D. Wright, O. H. Deichman, H. L. Metcalf, F. C. Vogt, B. W. Hole, Walter Ryan, T. H. Griffith, J. O. Halyers, John Deal, M. M. Bradley, C. A. Lloyd, I. H. Taylor, J. L. Taylor, L. C. Taylor, J. A. Egan, Roy Rogers, E. A. Walsh, O. B. Babcock, E. E. Hagler, G. N. Kreider, A. C. James, C. H. McElfresh, A. R. Trapp, W. G. Bain, J. W. Robinson, A. D. Taylor, J. A. Prince, C. L. Patton, B. B. Griffith, C. M. Bowcock, C. H. Walters, W. A. Halbert, S. E. Munson, Helen Babb, R. D. Berry and H. H. Tuttle. Drs. J. L. Cass, T. H. Griffiths and Paul Wakefield were unanimously elected members of the society. An assessment of $1 per member was made to defray current expenses for 1908. At the conclusion of the business session, the society were the guests of Dr. Arthur Prince at a banquet, after which Dr. Everett Brown of Decatur gave a very interesting paper. Subject, Tuberculin. Ten cases illustrating its use as a diagnostic agent, followed by general discussion of the subject. A rising vote of thanks to Dr. Brown for his paper, and to Dr. Prince for the banquet, occurred preceding adjournment.

Meeting of Jan. 13, 1908.

The January meeting of the Sangamon County Medical Society was held at the Lincoln Library, on the evening of January 13, Dr. Bowcock presiding. Dr. Patton presented a clinical report of a case of cowpox, together with interesting photographs of the patient. Dr. Kreider presented specimens of tuberculin and spoke of its use as a diagnostic agent. The applications of Drs. Penick, Wright, Huber, Walters, Wilbur, Johnson, Hill, Baxter, Baldwin and Grant were presented and referred to the board of censors. The sum of $5 was voted to be expended for a floral offering in case of the death of a member. Dr. G. T. Palmer presented

a paper, subject, Water in Treatment of Disease, followed by discussion. Dr. D. W. Deal presented a paper, subject, Improved Technic in Correcting Malpositions of the Uterus, followed by discussion.

Adjournment.

SHELBY COUNTY.

The Shelby County Medical Society met January 24, at Shelbyville, admitted twelve new members, transacted the routine business, and elected the following officers: President, Dr. H. E. Monroe; vice-president, Dr. W. E. Scarborough; secretary, Dr. F. P. Auld.

ST. CLAIR COUNTY.

The regular meeeting of the St. Clair County Medical Society was held at the Commercial Club rooms in Belleville, on Thursday, Jan. 9, 1908, with Dr. J. W. Rendleman, president, in the chair, C. W. Lillie, recording secretary; C. S. Skaggs, corresponding secretary, A. E. Hansing, treasurer. Members present, Hertel, Renner, Hilgard, Scheel, Reuss, Reis, Auten, Raab, J. W. and B. E. Twitchell, Belleville; Grimes, Hanson, Wiggins, Fairbrother and Spitze, East St. Louis; Miller, Caseyville; J. N. Kramer, Marissa. Dr. Wiggins presented a specimen of kidney stone and reported the case and the operaton for it. Dr. Starkel reported the case of a child suffering from a severe pain in which the diagnosis was not positive, but in which the *x*-ray showed the shadow of an abscess in the lower spinal region. The doctor cites this as an example of the cases where the treatment for spinal disease is sometimes instituted when nothing of the kind is indicated. The child recovered readily on the evacuation of the abscess. Dr. Fairbrother presented brief notes on cases of sudden death during, or immediately after sexual intercourse, the previously diseased heart being the remote cause of death, while the sexual act was the exciting cause. Several cases had been collected by the doctor bearing on this point. Dr. Fairbrother will soon report in extenso all the cases he has been able to gather. Any one who has had similar cases would confer a favor by reporting them to him.

Dr. Wiggins read a paper on Non-Penetrating Abdominal Wounds. This paper was discussed by Starkel, who referred to a case similar to the one reported by Dr. Wiggins, in which there was rupture of the bladder; and by Drs. Fairbrother, Miller and Hanson, the latter referring to a case of a patient who had fallen upon a rail, injuring the spleen without external visible evidence of injury, but in which the injury proved rapidly fatal.

The applications of Dr. John F. Kramer of Marissa and Dr. J. C. Spitze, East St. Louis, were received, favorably reported by the board of censors, and elected to membership. The following amendments to the by-laws were adopted:

Article —— was amended by adding the following sections:

SECTION —. Any member who repeatedly permits his name to appear in the lay press in connection with accident cases, or other cases coming within his practice, shall be deemed guilty of a breach of the Principles of Ethics of the American Medical Association, and may, upon satisfactory evidence of such violation, be expelled from this society.

SECTION —. Any member acquiring the reputation of an abortionist, and who by such reputation will bring discredit upon the society, may be expelled from the society.

SECTION —. Any member who shall be guilty of any other form of dishonorable conduct which will tend to bring discredit upon the society may be expelled.

SECTION —. The members of this society shall be the judges of the conduct of its members, and shall decide questions of standard.

SECTION —. A majority vote of the members present at any regular meeting shall be required to expel a member from the society.

SECTION —. No action to expel a member shall be taken unless notice of such meeting shall have been mailed to each member at their last known address; but the non-receipt by any member of the notice of the meeting shall not invalidate

any action if such notice has been mailed. Notice of the proposed action against a member shall not be necessary, but the member against whom action is to be taken must have notice in advance of the meeting.

The society adjourned.

C. W. LILLIE, Secretary.

VERMILION COUNTY.

The Vermilion County Medical Society met December 9, in the City Hall, Danville. The board of censors reported favorably on the names of Drs. H. B. Downes, M. Y. Downes and R. D. Cruikshanks, all being elected to membership. The program was to have consisted of the president's annual address, followed by case reports. Sickness in the family of the president, A. J. Leitzbach, prevented him from being present. Dr. J. M. Guy reported a case of puerperal eclampsia, and T. E. Walton and E. B. Cooley reported similar cases. At this point case reports were suspended, and it being the annual meeting, the election of officers was proceeded with, which resulted as follows: President, C. E. Wilkinson; vice-president, A. M. Miller; secretary and treasurer, E. E. Clark; censors (one to elect), H. S. Babcock. The society adjourned for refreshments, followed by a smoker, and resuming case reports, Dr. Crist reported a case of destruction of the bridge and frame of nose, suspected to be specific, but heroic doses of potassium iodid, two drams three times a day, had not caused improvement. He now suspects malignancy. Dr. Wilkinson presented a specimen of enormously enlarged Fallopian tube (pyosalpinx) measuring two inches in diameter and eight inches long; recovery after operation was uneventful. He also presented a specimen of epidydimitis of an undescended testicle removed with recovery.

E. E. CLARK, Secretary.

PEORIA CITY.

Meeting Nov. 19, 1907.

Regular meeting of Peoria City Medical Society was held Nov. 19, 1907. J. H. Bacon presented a paper on Opsonins. The paper first gave a synopsis of our ideas of immunity from the knowledge of bacteria as the etiological factor in infection; the place of opsonins in the Ehrlich theory; limitations of the field of usefulness to those diseases which are fought by phagocytes and of chronic duration; Wright's idea of autointoxication as a natural method of cure; when autointoxication is limited by pathological process the disease becomes chronic and the necessity for vaccination occurs; the technic of making vaccines, making emulsions of bacteria of different strengths, making test of opsonic index, also Simon's percentage methods, were described.

General summary of results in tuberculosis and chronic staphylococcal diseases were surveyed. Difficulties of technic make the estimation of the index impractical outside of hospitals where trained workers are plentiful. Hope of the profession at large is that the clinical symptoms will be found to give a proper index for vaccination both as to dosage and time of injection; in failure of that, that some new index will be found to make Wright's vaccines a ready means of combating diseases open to the use of all physicians and as easily used as the antitoxin for diphtheria.

Annual Meeting, Dec. 17, 1907.

The following officers were elected at the annual business meeting, Dec. 17, 1907: President, C. U. Collins, Peoria; first vice-president, P. H. Kelly, Chillicothe; second vice-president, Edward Hasson; secretary-treasurer, J. H. Bacon; censors, A. J. Kanne, L. A. McFadden, W. M. Cooley.

Meeting Jan. 7, 1908.

At the first meeting of the year of the Peoria City Medical Society the newly elected officers were installed.

On retiring from the office of president, Dr. B. M. Stephenson expressed his sincere thanks to his staff of officers and members for their cordial support during

the year. He was glad to be able to report progress during the year, especially in the scientific work. There were 31 papers presented, as compared with 17 the previous year. There is a surplus in the treasury.

Dr. C. U. Collins, on assuming the chair, presented an address. After thanking the society for the honor that had been conferred on him, he said he was pleased to note the friendliness and feeling of good will prevailing in the profession. This was brought about in part by an increasing number of physicians having common offices, coming in more intimate contact with each other, and finding the other man a good fellow. He was especially pleased to note the increase of study among the physicians and the move to establish a library of current medical literature. This is necessary for good up-to-date work, and should be supported by all the members. Medical literature is five years ahead of books, and the latest advances are brought out in periodicals. He hoped the coming year would be one of material progress.

J. H. BACON, Secretary.

NEWS OF THE STATE.

PERSONAL.

Dr. J. Clarence Webster, Chicago, has returned from Europe.

Dr. John W. Powers, Mount Carroll, has been appointed township physician.

Dr. George A. Zeller, South Bartonville, Ill., who has been ill, is reported to be convalescent.

Dr. Emil Lofgren, Rockford, tripped over a wire, December 25, breaking his left collar bone.

Dr. and Mrs. Orda D. Holland and son, Streator, returned December 25 from their European trip.

Dr. and Mrs. David Cook, Plano, will celebrate their golden wedding anniversary, January 30, at Bakersville, Mo.

Dr. Samuel G. Smith, Reddick, was struck with a club by a boy December 23, causing concussion of the brain.

Dr. Lucy Waite, Chicago, was the guest of honor at a banquet given by the professional women of Denver, January 1.

Dr. George W. Webster, Chicago, has been appointed a delegate to represent the State of Illinois at the American Medical Association session.

Dr. Ferdinand C. Hotz was given a complimentary reception and banquet, January 13, by the Chicago Ophthalmological Society, which he founded twenty years ago.

Dr. A. L. Bouffleur has been elected a member of the consulting staff of the Cook County Hospital, Chicago, to fill the place left vacant by the death of Dr. Nicholas Senn.

Clarence L. Wheaton, M.D., delivered the address on Medicine at the Indiana University School of Medicine, Indianapolis, December 11, the subject being "The Hygiene of Tuberculosis."

Dr. J. F. Percy, of Galesburg, while cranking his automobile, January 25, had the misfortune to sustain a compound fracture of both bones, near the wrist joint, of the right arm.

Dr. William A. Bennett, charged with the performance of an illegal operation which caused the death of a young colored woman, has been exonerated by the verdict of a coroner's jury.

Dr. Philip F. Gillette, for two years a member of the staff of the Illinois Hospital for the Incurable Insane, South Bartonsville, will return to Elgin January 16 and resume private practice in his specialty.

Dr. Hayden S. Barnard, who has been seriously ill at the Postgraduate Hospital with typhoid fever, is now recovering and will leave the hospital within a few days. He expects to spend a couple of months in the south recuperating before taking up his practice again.

Dr. G. W. Luttenberger, formerly a Christian minister of Dorchester, Macoupin County, Illinois, and later practitioner of that village, has been sued by his wife for divorce. She alleges that she paid for his ministerial and medical education in Kentucky and St. Louis and was then deserted, her husband leaving for the West in July.

Prof. Max Neisser, assistant to Professor Ehrich, who is making a hurried visit to America, has been spending a few days in Chicago, studying the methods of prevention of tuberculosis, milk hygiene and instituting special immunity research in the interest of the City Hygienic Institute of Frankfort-on-the-Main, of which he was recently appointed chief.

NEWS ITEMS.

Dr. W. B. Moon, of Belmont, Ill., lost his office and all its contents by fire on Dec. 15, 1907.

The office of Dr. E. C. Gaffney, of Springfield, was entirely destroyed by fire Dec. 20, 1907.

The Peoples' Hospital of Chicago is to have a new building at 365 Twenty-second street, to be three stories in height, 42 by 100 feet, and to cost $35,000.

At the recent minstrel show given by the Young Men's Club of Evanston, for the benefit of St. Francis' Hospital, about $1,000 was realized for the institution.

The annex to Dr. Broughton's Sanitarium, South Rockford, almost completed, is three stories in height, 40x70 feet, and will almost double the capacity of the institution.

Services in memory of Dr. Nicholas Senn were held in the Fine Arts Building, Chicago, Sunday, February 2, at 2:45 p. m. President James of the University of Illinois presided.

St. Vincent's College, Chicago, has been granted a charter as De Paul University, and the plans for its future embrace the establishment of a school for medicine and a school of law.

Hugo Hassiepen, Chicago, a "magnetic healer," charged with practicing medicine without a license, is said to have pleaded guilty before Judge Scovill, January 3, and to have been fined $100.00.

A special service for medical students was given at the Church of Epiphany, Chicago, January 19. The rector, Rev. John Henry Hopkins, D.D., preached on the subject, "Religion in the Sickroom."

Fire in the Senn Memorial College of Rush Medical College, December 24, caused great alarm in the hospitals near by. The fire was caused by the explosion of a gas meter, and was extinguished with little damage.

The Hospital of St. Anthony of Padua, Chicago, is to be enlarged at a cost of $100,000. The addition will include a five-story building, 50 by 115 feet, with a rear wing, 38 by 50 feet. It will be fireproof, with double tile floors.

The city is about to build an isolation hospital at Thirty-fourth street and Hamlin Avenue, Chicago. The building is to be two stories in height, 50 by 168 feet, to be heated by steam, lighted by electricity, and to cost about $50,000.

The State Board of Pharmacy, on December 10, framed a new move in the crusade against the sale of cocain by sending letters to every wholesale drug house in Chicago, requesting that the sale of cocain to druggists be limited to one ounce.

Dr. Harry G. Hardt, superintendent of the Illinois Asylum for Feeble-minded Children, Lincoln, as a result of a joint investigation conducted at the institute, January 6, regarding the injury of an inmate, Frank Giroux, was acquitted from all blame.

It is expected that a synopsis of the papers to be read at the next annual meeting of the Illinois State Society will be published in the April issue of THE JOURNAL. Members who are to write papers are urged to bear this in mind and to prepare the synopsis early.

The corner stone of the new People's Hospital, Chicago, was laid, December 29, with appropriate ceremonies. E. J. Magerstadt, city collector, was chairman, and addresses were made by representatives of the Health Department, Dr. Isaac C. Garey, founder of the institution, and others.

One S. D. Francis, advertising extensively in newspapers in different parts of the country as a medical specialist, also known as Dr. Dunn, 130 Dearborn avenue, Chicago, guaranteed to cure certain diseases, is reported by the daily press to have been summoned before the United States Commissioner to answer to a charge of using the United States mail to defraud.

The Illinois State Board of Health has recently issued the sixth revised edition of its special *Bulletin* on the cause and prevention of consumption. The *Bulletin* is quite complete, including statistics, suggestions how to destroy the sputum, how to avoid contracting consumption, the diet and home treatment of the disease. Considerable space is devoted to the discussion of the effects of the climate.

The Chicago Hospital Association was organized December 21 at the Presbyterian Hospital, its membership being restricted to hospital superintendents. Asa Bacon, superintendent of the Presbyterian Hospital, was elected president; Charles T. Garrard, Chicago Eye and Ear Infirmary, vice-president; Anna L. Davis, Frances Willard Hospital, secretary, and Dr. Lawrence Ryan, St. Anthony of Padua Hospital, treasurer.

Morgan County boasts of having one of the best selected medical libraries in Illinois. A room has been assigned for the use of the society at the public library. The medical books and journals have been com-

pletely indexed and a salaried attendant is employed. The leading medical journals are taken and the articles therein classified. During the last year 170 volumes, 103 pamphlets and 40 bound periodicals have been donated to the library.

W. H. Weaver, charged with conducting a fraudulent business and using the mails to defraud, was given a preliminary hearing before Judge O'Bannon and bound over to await the action of the grand jury in the sum of $800. Weaver manufactured an Indian tonic which he has sold for $1.00 per bottle and which he called "Oronos." The solution is said to have no medicinal merit. Postoffice Inspector Means examined Weaver's mail and found sixty orders for the medicine.

The governor has appointed the following members of the committee authorized by the General Assembly to investigate occupational diseases in the state and report to the next General Assembly: Dr. Ludvig Hektoen, Chicago, secretary of the Memorial Institute for Infectious Diseases; Dr. Alice M. Hamilton, Hull House, Chicago; Dr. George W. Webster, Chicago, president of the State Board of Health, and Dr. James A. Egan, Springfield, secretary of the State Board of Health.

The Indiana State Medical Association issued, on Jan. 15, 1908, their first official organ, the *Journal of the Indiana State Medical Association*. This journal is published monthly under the direction of the Council of that association. It is edited by Dr. Albert E. Bulson, Jr., assisted by Dr. B. P. Weaver. Dr. Bulson was formerly editor of the *Fort Wayne Medical Journal-Magazine*. The Indiana State Medical Association is to be congratulated upon securing Dr. Bulson as the editor.

Beginning with January, *The American Journal of Urology* will be edited by Dr. William J. Robinson, editor of the *Critic and Guide, Therapeutic Medicine*, etc. *The Journal* will be enlarged in scope so as to include venereal and skin diseases, and there will be added an abstract department which will review the genito-urinary and dermatologic literature in every civilized language. The subscription price has been reduced to $2.00. The publication and editorial offices have been removed to 12 Mt. Morris Park West, New York City.

The *Journal of the Indiana State Medical Association* has issued its first number with clean advertising pages and announces its intention of continuing to keep from its pages all nostrums and to limit all matter for advertisement to such as is found in the U. S. P. or N. F. or such as has been approved by the Council on Pharmacy and Chemistry of the American Medical Association. This is another influence for good. We congratulate this journal for starting right, and believe that its example will be followed among other state journals who have not yet eliminated nostrum advertisements.

The first quarterly meeting of the Chicago and Suburban Health League was held Jan. 11, 1908. The members were taken to the Isolation Hospital for a practical demonstration in the diagnosis and treatment of smallpox; later the meeting convened in the office of the lab-

oratories of the department. Dr. J. A. Lauer, of Whiting, Ind., presented a paper on "Pollution of Water Supplies," and a discussion of the typhoid situation in surrounding towns followed. All towns in the league are now forwarding weekly reports on local health conditions to the Chicago office, where they are summarized and a review mailed to all interested health officers.

The students of the University of Pennsylvania Medical School have formed an organization, the purpose of which is to acquaint the undergraduates with the workings of the American Medical Association, after which it is very closely modeled. The various student societies take the place of the state organizations and elect members to a House of Delegates, which transacts all the business of the association. An annual meeting is held, at which papers are read by chosen members, thus encouraging original research and scientific spirit. The organization is named the "Undergraduate Medical Association of the University of Pennsylvania" and already has over 250 members.

The American Medical Association issued the first number of the *Archives of Internal Medicine* January, 1908. This journal is devoted to the publication of articles written about internal medicine which are too technical or too elaborate to appear in a journal of general circulation; it represents special work in internal medicine, and as such occupies a distinct place in medical literature. The editorial board is composed of the following men: Joseph L. Miller, Chicago; David L. Edsall, Philadelphia; Richard C. Cabot, Boston; Theodore C. Janeway, New York City; George Dock, Ann Arbor; W. S. Thayer, Baltimore. The regular subscription price is $4.00 a year, but as an introductory price a reduction of $1.00 will be made to members and subscribers of the *Journal of the American Medical Association.*

Tuesday, December 31, at 2:30 p. m., at Room 150 Manual Training School Building, University of Chicago, vice-presidential address by Simon Flexner, retiring chairman of Section K of the American Association for the Advancement of Science. Subject: "Recent Advances and Present Tendencies in Pathology." Wednesday, January 1, at 2 p. m., at the Reynolds Club Theater, symposium on immunity, under the auspices of Section K of the American Association for the Advancement of Science, with the following program: Introductory remarks by the chairman, Ludvig Hektoen; M. J. Rosenau and John F. Anderson, "Anaphylaxis and Its Relation to Immunity"; V. C. Vaughan, "Hypersusceptibility and Immunity"; Preston Keys, "The Hemolysins of Animal Toxins"; William F. Ford, "Artificial Immunity to Glucosids"; S. P. Beebe, "The Differentiation of Homologous Proteids by Serum Reactions"; Frederick C. Novey, "Immunity in Spirochetal Infections"; H. T. Ricketts and L. Gomez, "Immunity in Rocky Mountain Spotted Fever"; E. C. Rosenau, "Virulence of Pneumococci in Relation to Phagocytosis"; G. F. Ruediger, "The Mechanism of Streptococcus Immunity"; Mazyek P. Ravenel, "Immunity of Tuberculosis"; H. Gideon Wells, "Chemical Aspects of Immunity."

SOCIETY NEWS.

Dr. Frank Allport delivered a public lecture in the Public Library building, January 11, on the subject, "Responsibility of the School to the Child."

The Chicago Medical Society has changed the place of its regular weekly meetings to the assembly hall on the second floor of the Northwestern University Building, corner Lake and Dearborn Streets.

Dr. P. J. H. Favell delivered a public lecture in the Chicago Public Library building, Jan. 1908, on the subject, "Hawaii, Japan, China and the Philippine Islands; Their People, Geographical and Medical Features."

At the meeting of the Brown County Medical Society the following officers were elected: President, Dr. E. C. Allworth, Mt. Sterling; vice-president, Dr. D. W. Owens, Hersman; secretary and treasurer, Dr. Frank E. McGann, Mt. Sterling; censor, Dr. William Parker; delegate, Dr. J. G. Ash, Herman.

The annual report of Dr. Carl E. Black, librarian of Morgan County Medical Society, shows what a valuable array of indexed literature is at the disposal of the members of this society. The library contains 1,729 volumes, well indexed, and the current medical literature consists of an excellent selection of representative medical publications, the contents of which have been systematically indexed by the Dewey system, making the subjects immediately accessible to any physician who wishes to look up a certain subject. The society is to be congratulated on its excellent facilities.

The following tribute to Dr. Nicholas Senn was published in the *Bulletin* of the Chicago Medical Society, Jan. 11, 1908:

IN MEMORIAM TO DR. NICHOLAS SENN.

WHEREAS, Nicholas Senn, M.D., Ph.D., LL.D., a member of the Chicago Medical Society, broke acquaintance with his colleagues and passed into history Jan. 2, 1908; and

WHEREAS, Professor Senn, by the arduous process of deeds accomplished had come to be known and honored by his professional brethren throughout the world as one of the most fruitful and brilliant exponents of the science and art of surgery of his generation; and

WHEREAS, The works of genius have permanently enriched the sutgical art by enlarging its powers and defining its applications; therefore, be it

Resolved, That it is the unanimous testimony of this society that in his life this great teacher of teachers has been an honor to his profession and to his country and an enduring blessing to all mankind; and that in his death we who are left here have lost our most inspiring leader and the world at large one of its most devoted and valuable servants.

WILLIAM E. QUINE,
GEORGE W. WEBSTER,
N. S. DAVIS,
Committee of the Chicago Medical Society.

The trustees of the Chicago Medical Society voted to follow the recommendation of the Council by appropriating $1,000 for the inauguration of the business bureau, said fund to be returned to the treasurer from the first available funds that they receive. As a result of this action an establishment of the business bureau has become a fact, and a central office for its use has been opened in the Northwestern University

building on the corner of Lake and Dearborn Streets. Dr. Henry B. Favill of the Chicago Medical Society has stated that the office will be open daily from 8 a. m. to 5:30 p. m. and on Wednesday evenings during the medical meeting, and it is hoped that this advance in an attempt to improve the facilities available for members of the society will be met by a willingness on their part to assist in the support of the bureau. It is hoped that the bureau or central office will be of the greatest benefit. It will succeed if all will help. Members are urged to put the accounts that they now give to their collectors in the bureau for collection. The bureau can be more than supported by the commissions that to-day are distributed among many private collectors. The bureau will be managed by Mr. Kenneth L. Eddy, who comes very highly recommended both as to his integrity and business ability. Members are very cordially invited to visit the bureau and become acquainted with Mr. Eddy or address him at the Bureau of the Chicago Medical Society, Northwestern University Building, Dearborn and Lake Streets.

PUBLIC HEALTH AND HEALTH BOARDS.

Virden reports 150 cases of measles.

Smallpox is reported to be epidemic east of Dunlap.

A number of cases of smallpox are reported from Manito.

The smallpox situation at Kilbourne remains unchanged.

At Pleasant Plains fifteen cases of smallpox are reported.

At Mossville four cases of smallpox of mild type are reported.

Diphtheria is said to be prevalent at Greer College, Hoopston.

At Wallingford six cases of smallpox are reported, and at Gibson City nine cases.

At Havana there are said to be thirty-five cases of smallpox, almost all of mild type.

It is estimated that there are fifty cases of smallpox at Ridott, twenty miles west of Rockford.

Measles are reported at the Illinois Asylum for Feeble-Minded Children, Lincoln, where eighteen cases have been found.

At the University of Illinois there is a smallpox victim, a member of the faculty, and other cases have occurred in Champaign.

Smallpox is said to be present in twenty-seven communities in seventeen counties in the state, and new cases are constantly being reported.

During December there were 2,704 deaths reported in Chicago, equivalent to an annual death rate per 1,000 of 15.10. Chief among the death causes were: Pneumonia, 477; consumption, 278; heart disease, 237, and violence (including suicide), 218.

On January 18 the bill enabling the State Board of Health to allow medical students who pass a satisfactory examination at the end of four years in an accepted college to practice during the fifth year of study, was advanced to third reading in the House.

The health commissioner of Chicago is formulating plans for decreasing the mortality among the members of various trades, from so-called trade diseases, by the systematic dissemination of information regarding the causation and prevention of these diseases.

The vaccination rule of the Board of Education of Chicago was upheld in the Circuit Court, December 23, in the mandamus suit instituted by Mr. B. F. Jenkins to compel the city to allow his daughter to attend the John Fiske Public School, although she had not been vaccinated.

The State Board of Health of Illinois has recently issued a revised edition of their circular on the subject of smallpox, in which great consideration is given to the differentiation of smallpox and chickenpox. Also a consideration of vaccination and revaccination, and many illustrations of the various conditions of the disease of small-pox where vaccination has not been practiced.

At the thirty-first annual meeting of the State Board of Health, held in Springfield, January 7, 1908, special attention was devoted to the alarming spread of smallpox throughout the state. The board directed that 100,000 copies of the circular on "consumption" may be distributed through the physicians of the state, and voted to establish 200 stations throughout the state where containers for the transmission of sputum might be obtained by physicians. In its annual report the board will again recommend the establishment of a state hospital for the treatment of tuberculosis. The election of officers resulted as follows: Dr. George W. Webster, Chicago, president, and Dr. James A. Egan, Springfield, secretary-treasurer.

Chicago's death rate for the year 1907 is 15.25 per 1,000 of the mid-year population. This is the highest rate recorded for any year since 1899, with one exception, 1903, the rate of which was swelled to 15.43 through an extraordinary circumstance, the Iroquois Theater disaster. Of the 32,143 deaths reported during the year, 17,453, or 54.3 per cent., were returned during the first half of the year; the remainder, 14,685, 45.7 per cent., during the last six months. The death rate of the first six months, 16.70 per annum per 1,000 of population, was 11 per cent. in excess of the decennial average for this period, while the rate of the last half of the year, 13.34, was 4.6 per cent. lower than the average July to December rate for the decade.

The following, taken from the *Bulletin* of the Department of Health of Chicago, Ill., illustrates some of the work being done by the Chicago Tuberculosis Institute: "During the first three weeks that the six special dispensaries of the Chicago Tuberculosis Institute have been in operation 148 patients have applied for treatment. The physicians and nurses attached to this great service report that it is their daily experience to find consumptives living in closest relation with their families and entirely ignorant of the means of preventing infection. In all such instances the dispensary physicians have instituted a manner of living that will be safer for the health of the family and at the same

time promote the health of the patient. These dispensaries will doubtless prove the means of saving hundreds of incipient cases from the dreaded disease and thousands of healthy persons from the effects of careless and ignorant exposures to infection. The educational work of the dispensaries will be as valuable as the strictly curative function. The locations and consultation hours of the dispensaries are: Chicago Policlinic Hospital, 174 Chicago Avenue, Tuesdays and Fridays, 2 to 3 p. m.; Rush Medical College, 757 West Harrison Street, Wednesdays and Saturdays, 11 a. m. to 12 noon; College of Physicians and Surgeons, Congress and Honore Streets, Tuesdays and Fridays, 11 a. m. to 12 noon; Jewish Aid Society, Morgan and Maxwell Streets, Mondays and Tuesdays, 3 to 5 p. m.; Northwestern University Medical School, 2431 Dearborn Street, Mondays and Thursdays, 10 a. m. to 12 noon; Hahnemann Hospital, 2811 Cottage Grove Avenue, Mondays and Thursdays, 2:30 to 4 p. m."

The following, taken from the *Bulletin* of the Chicago Department of Health for January 11, is of interest because of the prevailing epidemic of influenza: "The devitalizing weather conditions that prevailed during the latter part of December, and to some extent up to the present time, are held responsible for the present excessive mortality. An abnormally high temperature, excessive humidity, a deficiency of precipitation and sunshine, are atmospheric conditions which have favored the growth and dissemination of disease germs and the lowering of vital resistance against their invasion. Not since the epidemic season of 1898-99, when the meteorologic conditions were much the same as now, has influenza played such an important part in the mortality as at the present. During the last week 31 deaths from this disease were reported, and in numerous instances it was given as a contributing cause of death. It is estimated that 30 per cent. of the population of Chicago (nearly 650,000 people) are at present suffering from influenzal colds, catarrhs, intestinal disorders, neuralgias and other protean manifestatations of the malign influence of influenza. In anticipation of another pandemic of influenza the *Practitioner* (London, England) last year devoted an issue to the discussion of the disease. In one of the papers on the treatment and prevention, by Sir William Broadbent, Surgeon in Ordinary to the King, that eminent authority says: 'As a prophylactic (preventative) I early order two grains of quinin every morning during the prevalence of the epidemic, and the results appeared to be good. Of course the patients who were taking quinin did occasionally get influenza, but I have known very many instances in which this dose has made a complete difference in the patient's liability to infection and even in the general mode of life. I have, moreover, had opportunities of obtaining extraordinary evidence of its positive power. In a large public school it was ordered to be taken every morning. Some of the boys in the school were home boarders, and it was found that while the boarders at the school took the quinin in the presence of the master every morning, there were scarcely any cases of influenza among

them, although the home boarders suffered nearly as much as before. In a large girl's school near London the same thing was ordered, and the girls and mistresses took their morning dose, but the servants were forgotten. The result was that scarcely any girl or mistress suffered, while the servants were all down with the influenza.' The weather man, however, can do more than quinin, the doctor or the sanitarium toward improving present health conditions. Let him give us a normal January temperature, a snow blanket four or five inches deep, with an occasional hour of sunshine, and the state of Chicago's health will quickly improve."

NEW INCORPORATIONS IN JANUARY, 1908.

Wilton Medicine Co., Chicago; capital $25,000; manufacturing patent medicines; incorporators, Oscar E. Leinen, Charles O'Donnell, Charles R. Francis.

Freeport Christian Science Association, Freeport; advancement of science and health; incorporators, Electa B. Breed, Sarah C. Porter, Frances E. Baker.

Co-operative Dental Supply Company of Illinois, Springfield; capital, $10,000; manufacturers and dealers in dental and physicians' supplies; incorporators, Elmer E. Hagler, John H. Rice, George H. Westlake.

CHANGE OF LOCATION.

Dr. Charles Thompson, recently of Chicago, has located in Taylorville.

Dr. A. B. Atchinson, of Stillman Valley, has removed to Rockford, Ill.

Dr. H. Edward Sauer has opened an office in the Reliance building in Chicago.

Dr. E. J. Lee has removed from Valmeyer, Ill., to 621 Wright building, St. Louis, Mo.

Dr. I. M. Miller, of Chicago, 615 W. Adams Street, has removed to North Yakima, Wash., R. F. D. No. 3.

Dr. Arthur H. Beebe, of Chicago, 151 Southwestern Avenue, has removed to Stillman Valley, Ogle County, Ill.

Dr. Aria Louis Derdiger has opened an office at 70 State Street, Chicago, limiting his practice to the eye, ear, nose and throat.

MARRIAGES.

Rufus Cole, M.D., Baltimore, to Miss Annie Hegeler, of LaSalle, Ill., January 2.

John G. Augustine, M.D., to Mrs. Emma Merdith, both of Batavia, Ill., December 23.

R. A. Mitchell, M.D., Marshall, Ill., to Miss Alma E. Price of Indianapolis, December 5.

Christian Frederick Grimmer, M.D., to Miss Louise M. Warner, both of Pekin, Ill., December 31.

WILLIAM HAMLIN WILDER, M.D., to Miss Caroline Louise Rothschild, both of Chicago, December 25.

H. M. MCCRACKEN, M.D., of Longview, Ill., to Miss Maude McCullough, of Scottsburg, Ind., Dec. 26, 1907.

EMIL WINDMUELLER, M.D., Woodstock, Ill., to Miss Helen Howden Armstrong, of Kenosha, Wis., Dec. 28, 1907.

DEATHS.

CLUS E. SJOWALL, M.D., University of Stockholm, Sweden, 1879; died at his home in Chicago, January 7, aged 55.

WILLIAM R. HAMILTON, M.D., aged 92, former mayor of Peoria and volunteer surgeon of the Civil War, died December 30.

F. R. WAIN, M.D., of Peoria, while visiting during the holidays in Davenport, Iowa, died in that city, of heart trouble, January 1.

JAMES CROZIER, M.D., Illinois Army Board, 1861, died at the Soldier's Home, Quincy, Ill., July 26, from cerebral hemorrhage, aged 74.

SAMUEL MUNDY (years of practice, Ill., 1877) for fifty-seven years a practitioner of medicine; died at his home in Mt. Erie, Ill., December 12, aged 81.

JACOB B. HAYES, M.D., of Carrollton, a veteran of the Civil War, graduate of the American Eclectic Medical School of St. Louis, 1878, died Jan. 17, 1908.

WILLIAM W. MCCLELLAND, M.D., University of Louisville, Ky., Medical Department, 1838; died at his home in Homer, Ill., December 2, from pneumonia, after an illness of two weeks, aged 72.

WILLIAM ALEXANDERA CONKEY, M.D., University of Louisville, Ky., Medical Department, 1838, died at his home in Homer, Ill., December 2, from pneumonia, after an illness of two weeks, aged 86.

ROBERT CARR BLOCK, M.D., Hahnemann Medical College and Hospital of Chicago, 1893; of Ferguson, Mo., died at a sanatorium in Jacksonville, Ill., of locomotor ataxia, after an illness of two years, aged 46.

BLEXTON HARRIS, M.D., Rush Medical College, Chicago, 1859; surgeon in charge of the Eighteenth Army Corps Base Hospital during the Civil War; died at his home in Aurora, Ill., December 25, after a short illness, aged 83.

FREDERICK H. FOSTER, M.D., Hahnemann Medical College and Hospital, Chicago, 1872; a specialist on diseases of the eye and ear; died at his home in Chicago, January 18, from nephritis, after an illness of a year and a half, aged 56.

THEODORE T. HEARING, M.D., University of Munich, Germany, 1860; surgeon of the Ninth Wisconsin Volunteer Infantry during the Civil War; died at his home in Bloomington, Ill., December 20, after an illness of one week, aged 74.

ROBERT NEWTON STRONG BARGER, M.D., Rush Medical College, Chi-

cago, 1868; a veteran of the Civil War, during which he served as hospital steward; died at his home in Hoopsdale, Ill., December 19, from cerebral hemorrhage, after an illness of three years, aged 65.

FREDERIC C. SEMOLROTH, M.D., Bennett College of Eclectic Medicine and Surgery, Chicago, 1873; formerly postmaster of Walnut Grove, Ill., but later of Peoria; died in St. Francis Hospital in that city, January 8, from cerebral hemorrhage, after a short illness, aged 70.

JOSEPH JULIUS OPENHEIM, M.D., Northwestern University Medical School, Chicago, 1907; of Chicago; an interne in Cook County Hospital; while delirious from typhoid fever, jumped from a third-story window at the Presbyterian Hospital, December 31, and died from his injuries, January 4, aged 23.

JOSEPH HALLER, M.D., Northwestern University Medical School, Chicago, 1862; Lanark, Ill., contract surgeon in the army during the Civil War; a member of the Illinois State and Carroll County medical societies; died at the Rockford Hospital, December 11, two weeks after an operation for subphrenic abscess, aged 71.

WILLIAM C. EGELHOFF, M.D., Northwestern University Medical School, Chicago, 1902; of Chicago, a member of the American Roentgen Ray Association; a member of the hospital corps during the Spanish-American War; died at Augustana Hospital, Chicago, from septicemia, said to have been due to exposure to the *x*-rays, December 27, after an illness of three years, aged 35.

J. HOMER COULTER, M.D., Medical College of Ohio, Medical Department of the University of Cincinnati, 1885; formerly a specialist on diseases of the ear, nose and throat, of Chicago; a member of many medical societies, and professor in Harvey Medical College and Chicago Clinical School; died in the Illinois Northern Hospital for the Insane, Elgin, July 24, from general paralysis of the insane, aged 46.